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SOVIET ENERGY EXPORTS AND WESTERN EUROPEAN ENERGY SECURITY

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BEFORE THE

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ENERGY, NUCLEAR PROLIFERATION, AND
GOVERNMENT PROCESSES

OF THE

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GOVERNMENTAL AFFAIRS
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SOVIET ENERGY EXPORTS AND WESTERN EUROPEAN ENERGY SECURITY

WEDNESDAY, OCTOBER 14, 1981

U.S. SENATE,
SUBCOMMITTEE ON ENERGY, NUCLEAR
PROLIFERATION, AND GOVERNMENT PROCESSES,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, D.C.

The subcommittee met at 9 a.m., in room 3302, Dirksen Senate Office Building, Hon. Charles H. Percy (chairman of the subcommittee) presiding.

Present: Senators Percy, Cohen, and Glenn.

OPENING STATEMENT OF SENATOR PERCY

Senator PERCY. I would like to welcome everyone to this hearing of the Subcommittee on Energy, Nuclear Proliferation, and Government Processes on Soviet energy exports and Western European energy security.

We all know that most of the world is dangerously vulnerable to a disruption in the supply of oil from the Persian Gulf. In today's hearing, we will examine another energy security problem far from the Persian Gulf, yet potentially just as significant.

The Soviet Union and a group of Western European countries will soon put the finishing touches on a $10 billion energy deal that could provide Europe with almost 30 percent of its natural gas and 5 percent of its total energy supplies.

But along with the tremendous quantity of Soviet gas that will flow to Europe, there is a very real possibility that quite unwelcome political leverage could flow through the pipeline as well.

Europe already imports a substantial amount of its energy from the Soviet Union. Today in West Germany, some 16 percent of its gas, 6 percent of its oil, and half of its enriched uranium are supplied by the Soviet Union.

This has been the subject of conversations that I have had with European leaders, such as Helmut Schmidt, in the forum of the Foreign Relations Committee as well as private discussions.

It is a dialog that has been going on. We have had a frank exchange of views. We have been supplied with a great deal of information, opinions, and judgments, but now as the deal looks as though it is coming to fruition, it is time in a very formal sense to take account of where we do stand.

The pipeline deal will nearly double European dependence on Soviet gas when it is completed. Europe will become much more vulnerable than today to a cut-off in hard-to-replace natural gas. In addition, the multibillion dollar loans financing the pipeline could leave Western banking systems dangerously exposed. But it is not the prospect of an actual cut-off in Soviet supplies that most worries me. The real problem is the leverage that the threat of a disruption—implicit or explicit—gives the Soviet Union over our European allies.

Our allies realize this threat just as much as we do. Yet they, quite unlike the resource-rich North Americans, have little prospect of ever becoming energy independent. If we put ourselves in the Europeans' shoes, their energy options seem limited indeed.

Their only real hope for energy security in this century is a combination of supply diversification and stockpiling. They could turn to the United States, with our vast reserves of coal—but up to now experts on both sides of the Atlantic have agreed that American railroads and ports, without major expansion, would have difficulty satisfying European energy needs. We have a lot of work yet to do in this area.

Importing natural gas is understandably attractive to Europe, and the Soviet Union is the largest potential supplier of this fuel. There lies our problem. As we work with our allies to address it, let's work at solving common concerns rather than creating new rifts among us.

Rather than telling the Western European nations not to build the pipeline, which may not be realistic, let's press them and work with them to do two things which are realistic.

First, we should ask them to work with us to expand our capacity to export American energy, while expanding their capacity to use it. While I expect coal to be the centerpiece of this strategy, synthetic fuels and nuclear technologies may also limit European dependence on Soviet gas.

Second, we should ask those nations tapping into the Siberian pipeline not to import so much gas that it creates a new dependence on the Soviet Union. If they simply have no alternative, if American coal and other energy sources cannot be adapted to their needs in sufficient quantities, we should ask them to build in the measures necessary to be sure dependence does not translate into vulnerability. Creating strategic gas reserves, converting industrial equipment to have the capacity to burn alternative fuels, and constructing surge capacity in existing European gas fields can all help accomplish this. It is all expensive, of course, but money spent on energy security is money in the bank.

Nor can we ignore the trade issues associated with the Siberian pipeline. Its construction promises to give some much-needed business to hard-pressed European steel and equipment manufacturers.

Likewise, the Caterpillar Tractor Co., the largest manufacturer in Illinois, and other American companies, can and should share in whatever business is generated. As long as we can come to some agreement with our allies as to how the pipeline could be built without creating a new form of energy vulnerability, it would make no sense for us to take a rigid, moralistic stance banning American participation in its construction. Such a stance would not hurt the Soviets one bit—they could just as easily buy all that they need from Japan, who stands ready, willing, and able to supply equipment—but would hurt American workers in an age of persistent high unemployment.

I realize the Reagan administration has been focusing on these very difficult issues for some time now, and I look forward to hearing what our distinguished panel of Government witnesses has to say about them.

Senator Cohen?

OPENING STATEMENT OF SENATOR COHEN

Senator Cohen. Mr. Chairman, I don't have a prepared statement, but it seems to me you have just touched upon one of the fundamental problems that I see in this whole project and in our relations with the Soviet Union, and with our Western allies. The United States can't simply take a pious or moralistic, rigid stance against the construction of this pipeline and urge our allies to do likewise, for if we do that, we not only will not deter the Soviet Union from acquiring the technology, they will turn to the Japanese.

It seems to me that is the underlying problem in practically every aspect of foreign policy today. It is inherent, for example, in the debate currently taking place on the AWACs, that if we don't sell the AWACs to the Saudis, the British will sell the Nimrod, or the French will sell the Mirage. We see, time after time, our own foreign policy being dictated by what our allies will or will not do in the absence of action by the United States.

This comes back, I think, to my own fundamental concern. We don't have a coherent Western policy in dealing with the Soviet Union—not on trade items, certainly not on energy items. In the absence of having that kind of coherent policy, it seems to me the project itself is going to dictate a policy which we may or may not like in the future.

It seems to me—I was looking, reading over this material last evening and I was looking for some sort of metaphor. A number of them came to mind. But it seems to me, again coming back to the policy decision here, if we don't do this, we may very well encourage the Soviets to move into the Middle East and cause even more disruption, more instability, and thereby jeopardize the access to the Persian Gulf oil.

It seems to me the Soviet Union has been placed in the position, through a kind of lack of policy on the part of the United States over the years, of now being like a bank robber who walks into the bank with a weapon and says, "Give me a loan or I will blow your head off." That is exactly what it seems to me we are saying, when we say unless we construct or help construct this pipeline, unless the West helps to finance the pipeline, then the Soviet Union is apt to cause more tension, more terrorism, than it currently does in the Middle East. So I would say that they are very much like a man that walks into the bank and says, "Give me a loan or else." In essence, that is what they are asking for here, a loan, very favorable credit from the West, or else.

One other image comes to my mind. I can't think of the name of that little device which, as a child, I used to have where you put your two fingers in, then try to pull your fingers out and it simply tightens around your fingers. It seems to me that we—not we but, more importantly, Western Europe—are going to find ourselves in exactly that place.

To the extent that these statistics are correct that West Germany will in fact become 30 percent dependent upon the Soviet Union for supply of natural gas, 6 percent of its overall energy supplies, and the others as far as the other countries who are contemplating participating in this development, it seems to me that it is inevitable. It is inevitable in the next 10 years that we will find those Western European nations having put their fingers into this little device. To the extent that they try to withdraw from that device, it will only tighten. It seems to me the Soviet Union will be in the position at that point of having drawn them into a sphere of influence where they cannot afford to be antagonistic or in any way participate in embargoes, boycotts, or expressions of disapproval of Soviet conduct wherever that conduct may take place. So I have great reservations about the course that we are following. It seems to me that, from 1972 to 1980, we have been transferring some $800 million worth of technology dealing with oil and gas. I have a fundamental question as to why this country should be transferring either wheat to feed the Soviets or technology to help them become energy self-sufficient when, in fact, they are devoting a disproportionate amount of their resources to building more and more weapons, more and more SS-20's and 18's, forcing the United States now to contemplate engaging in a massive military buildup of its own.

So those are some of the thoughts I have, Mr. Chairman, as we go into this hearing. I will listen with great interest to the testimony of my friends, Mr. Hormats, who I regard as an outstanding individual in the field, Mr. Davis, and Mr. Olmer.

Senator Percy. Senator Cohen, I thank you very much indeed and I think, in the spirit of the dialog and discussion here on a complex issue, it is fair to indicate our, as we might say, exceptions even though we always try to keep an open mind on this particular issue. I have had a long, strongly felt viewpoint before I came to the Senate. It seemed to me, while I was an industrialist, ludicrous for the United States to have on the strategic list certain items that could be readily purchased in other places. I thought the most ludicrous of all that I ever saw was Bell and Howell being prohibited from selling printers, perforators, and supplies in the picture industry to the Soviet Union. At the same time, we made identical equipment under license, except "made in Britain" by Bell and Howell was on the label. They were able to ship that exact equipment year after year from London using British labor, British overhead, British absorption of cost, the same thing that Americans, our Chicago companies were prohibited from doing. That just seemed wrong to me. Therefore, on the Banking Committee, when I first came here, we changed the administration and control of the Export Administration Act and simply indicated that if the technology was not unique and it could be purchased other places in the world, the United States should not then be deprived. It weakens our economy. It strengthens other economies at our expense.

In looking at this particular situation, I know the administration has been struggling to come to a judgment, so I felt calling these hearings would hopefully move that process along before events overrun us.

Now I have just seen the testimony of the administration that is about to be given and I would like to say, in essence, I wholeheartedly support the judgment and opinion the administration has arrived at. It is fair, it is equitable, it is good for the American economy, it is good for our relationships with our allies, and most of all, it is a practical thing which is aimed to strengthen the American economy. We know it needs strengthening and we should not be so, in a sense, moralistic that we deal ourselves out of these things and let events just sweep over us, as they will sweep over us in this case. It is quite apparent, like it or not, that Europe is going ahead. When Chancellor Schmidt says, "Our overall energy dependence is still only 5 percent on the Soviet Union," they are well aware of what they are going into. They are not going to stand back from going into something that they feel is in their best interest, their national interest, and really, in the overall interest all around. So we are very happy to have your testimony. I think you have thought the problem through very carefully.

Secretary Davis, would you care to begin?

TESTIMONY OF W. KENNETH DAVIS, DEPUTY SECRETARY, DEPARTMENT OF ENERGY

Mr. Davis. Thank you, Mr. Chairman, members of the committee, I am pleased to appear before you today to discuss the energy implications of the proposed Soviet Siberian natural gas pipeline and to review a number of world market developments which could help displace the anticipated deliveries from the pipeline.

I thought I would take some excerpts from the statement and summarize part of it, and submit the whole statement for the record if that is satisfactory.

Senator Percy. The full testimony will be incorporated in the record.[1]

Mr. Davis. In recent years Western Europe's demand for imported oil has fallen. In spite of substantial economic growth between 1973 and 1980, total energy requirements in Western Europe grew very little and oil consumption fell by almost 2 million barrels of oil per day. Rising oil prices have caused both the United States and its European partners to substitute alternative fuels for petroleum.

During the 1973–80 period, oil as a percentage of overall energy use declined from 63 percent to 53 percent and Europe's dependence on oil imports to meet energy demand declined from 61 percent to 43 percent. Furthermore, Western Europe's overall energy requirements are expected to grow by only about 1 percent per annum during the 1980's, or less than half the rate of expected growth in GNP. Oil demand is expected to continue its decline.

Europe has thus achieved considerable success in switching to alternative fuels and by reducing oil demand in response to rising oil prices. In so doing, they have emphasized natural gas as a major alternative to oil in meeting future energy needs. However, while we fully support their policy to reduce vulnerability to oil supply disruptions, there is a possibility that they have underestimated both the security and economic risks of gas imports and the potential for alternative sources and greater efficiency.

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[1] See p. 34.

Western Europe is presently dependent upon the U.S.S.R. for about 1 MB/D in oil deliveries. Four countries, Germany, France, Italy, and Austria import about 2.2 billion cubic feet per day (BCF/D) of Soviet gas, the energy equivalent of about 400,000 barrels per day (MB/D) of oil. These energy exports are the U.S.S.R.'s principal source of hard currency, accounting for about half of total receipts.

The composition of Soviet/West European energy trade will shift during the 1980's from oil to gas. Given the apparent near-term peaking of oil production in the U.S.S.R. and the need to continue supplying Eastern European partners, oil exports to the West can be expected to decline and may even be eliminated by the mid-to-late 1980's. The U.S.S.R. will seek to replace these oil exports with gas sales, for without energy generated hard currency earnings, it would be virtually impossible for the Soviet Union to maintain current levels of purchases from the West.

Negotiations are currently under way for the construction of a 5,000 to 6,000 KM pipeline that would link the major gas fields near the Yamal Peninsula to Western Europe. Six Western European countries would be involved in purchasing gas from the project: West Germany, France, Italy, Austria, the Netherlands, and Belgium. Although Japan would not receive any gas from the pipeline, the Japanese could play a major role in its completion by selling equipment for use on the project.

This pipeline could be completed by 1987–88 if there are no unanticipated technical difficulties or major East-West political controversies. It was originally anticipated that the pipeline would deliver at least 4 billion cubic feet/day [BCF/D] in additional gas supplies to West European markets. The deliveries from this pipeline would be about 3 billion cubic feet per day in addition to the Soviet gas deliveries of about 2.2 billion cubic feet per day. Although many Europeans consider the gas imports to be in their best interest, we believe there are significant energy security problems associated with the project. Specifically we feel that the Soviet reliability may be more questionable when their share of the gas market increases and Western Europe therefore becomes more vulnerable.

We also think—in reviewing the various potential supply and demand situations—that our allies and friends in Western Europe have overestimated their need for Soviet gas in view of world energy market developments and the potential energy security costs involved in this project. There may be alternative energy sources available to Western Europe during the relevant timeframe that would be competitively priced and in some cases are more secure.

The future world oil market may not in fact be as tight as anticipated during the period when the plans for the expanded gas imports were originally made.

While this administration is taking further steps which are expected to lead to an expanded U.S. energy production and increased efficiency, these actions are expected to have an effect on U.S. demand and supply which will leave more oil and more gas available for the rest of the world and for Western Europe.

Certainly, as we move to deregulate natural gas prices in the United States, U.S. domestic gas production will be stimulated. This will lessen our need for imported gas and oil and free up more supplies on the world market and make available supplies for Western Europe.

Even now under the present regime of domestic gas price regulation, it seems unlikely that large quantities of long-haul liquified natural gas will reach U.S. markets in the years ahead. Our import policy requires that foreign supplies be priced competitively with alternative fuels, mainly residual fuel oil.

We do not believe that most long-haul LNG imports could meet this test and that therefore significant volumes of African and Near Eastern gas thus would be available for Europe in the late 1980's. This will come from countries such as Algeria, Nigeria, and some of the other African countries. We also think that North Sea gas can also serve to displace Soviet gas in the longer term. Here we are looking particularly at the future developments in the Norwegian area.

We think the situation with respect to coal is also very favorable in terms of European energy supplies. Coal has more potential than any other resource for providing additional energy for this century and beyond.

Nearly everyone who has studied our own situation and that of the other major industrialized countries in recent years has concluded that rapid growth in the use of coal is critical for the successful transition to a more secure energy future. There are increasing indications that a coal renaissance is now underway, and that the shift to coal use will gain momentum if we are wise enough to let the market forces work their way. I would also say that of course coal is not a direct substitute for gas or oil, but over a long period of time these shifts can be made.

The boom in U.S. exports, for example, that was forecasted by the World Coal Study, in which I was involved, were predicted to begin in earnest in 1985. These changes are already evident. The World Coal Study projected that by 1985, the United States would be exporting 20 to 30 million tons of steam coal. We reached that level last year by exporting 27 million tons of steam coal.

I think it is important to note that, in the short term, our coal industry has done an outstanding job to meet this phenomenal demand in growth. Over the long run coal producers will be prepared to do much more based on plans already announced and some already put into effect. Between now and 1990, some projections indicate that international trade in steam coal could increase from 80 to 280 million tons per year, a 12 to 13 percent annual growth rate.

U.S. steam coal exports are projected to be about 75 million tons in 1990, and 180 million tons by the year 2000. With its large reserve base and stable investment planning, U.S. industry is well positioned to capitalize on future growth in worldwide coal demand. This administration plans to make the United States a reliable supplier of coal, as witnessed by the creation of the Coal Interagency Working Group chaired by the Department of Commerce to remove regulatory impediments to coal trade. For their part the European governments must lower barriers to coal imports and facilitate coal achieving the full market share with a relatively low price.

This administration has also announced its commitment to the development of nuclear power in the United States. I must stress that the

United States will reestablish itself as a reliable partner in the international nuclear energy arena.

Many of our allies and friends in Europe will welcome the reentry of the United States into a position of leadership in the international nuclear community. We believe that the reestablishment of the United States as a reliable nuclear partner would help to mitigate some of the problems associated with the accelerated development of Western European nuclear power generation.

In conclusion, I would like to say that we are sensitive to Europe's needs for reliable additional energy supplies. We are concerned, however, that increased reliance on Soviet gas carries with it significant political risks and possible economic risks. If alternative sources such as gas from other nations, coal imports, nuclear and even oil are given more attention, and the potential of energy efficiency is recognized, we believe that the perceived need for Soviet gas would be lessened. We feel that a prudent reexamination of this situation, including the reliable price leverage aspects as well as the financing bases, would be very much in order by our partners.

The policies of the Reagan administration will encourage energy production and efficiency in the United States, which will have a beneficial effect upon the world energy markets of the 1980's and beyond. We are also confident that the United States will be a growing reliable supplier of coal as a major alternative to oil and natural gas, and wil be a more positive force in the expansion of nuclear power. We expect to be discussing these issues with our European partners and friends during the next few weeks in connection with the proposed pipeline.

Thank you.

Senator **Percy**. Thank you very much, Secretary Davis.

Secretary Olmer?

TESTIMONY OF LIONEL OLMER, UNDER SECRETARY FOR INTERNATIONAL TRADE, DEPARTMENT OF COMMERCE

Mr. **Olmer**. Mr. Chairman, it is a privilege to be here today to participate in the discussion of Soviet energy exports and their relationship to Western Europe.

I believe that the implications are as important to the Western World as for reasons of their own that the Soviets are fast developing their enormous energy potential. We therefore believe it is both timely and vital that your committee examine these implications and contribute to what has been an ongoing process in the Reagan administration of determining what can and should be done about this expansion.

I would like to summarize my remarks and ask that the complete written statement be included as part of your committee's record, Mr. Chairman.

Senator **Percy**. Your statement will be included in its entirety in the hearing record.[1]

Mr. **Olmer**. We should understand at the outset that the current policy governing export controls on oil and gas equipment is one which was inherited from the previous administration. The Reagan administration is now in the process of examining this legacy. The policy was originally installed in 1978 in the wake of the trials of Soviet dissidents and has since operated on an ad hoc basis where each new application was examined de novo.

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[1] See p. 44.

Part of what we are doing in our current review of this policy is to attempt the development of a clear set of standards that will guide U.S. business in its future dealings with the Soviets in oil and gas equipment.

With that policy in existence when the Reagan administration took office, the President met in Ottawa in July to discuss the security implications to the Western Alliance of potential dependence by Europe on Soviet energy. We don't believe that dependency on Soviet energy supplies is in Western Europe's interest nor do we want the Soviets to increase substantially their hard currency earnings.

Soviet energy exports now provide almost two-thirds of Soviet hard currency earnings, earnings which are used to acquire Western goods and technology vital to the Soviet industrial and military base. The fastest way, some would argue the only way, for the Soviets to increase or even maintain these hard currency earnings is to develop more quickly their massive gas reserves since their oil production is likely to stagnate or fall in the next few years.

The administration has developed for discussion with our allies various proposals for energy alternatives for Western Europe. An important part of our presentation of alternatives to the pipeline is the administration's policy to encourage increased U.S. coal exports. As Deputy Secretary Davis pointed out, the Department of Commerce is leading an Interagency Task Force on Coal Export Development regarding which I would be happy to provide you additional information following my statement.

In the process of determining what can be done to limit Western European energy dependence on the U.S.S.R., the Department of Commerce has two very important and at times seemingly contradictory charges. First and most important in our trade relations with the Soviet Union, the export licensing process must guard against the transfer of goods and technology which endanger our national security. The second charge, although more important for our relationships with marketing economies, is that of trade promotion.

The convergence of these two charges, one to restrict and the other to promote, is nowhere more evident than in the debates surrounding Soviet energy development and the Yamal pipeline. In the early years of the cold war, the United States clearly possessed technological superiority over the entire world and could control the availability of equipment or the development of technology. Now our once clear technological edge has vanished in many areas, or has been reduced to a very thin lead. Effective controls can no longer be maintained unilaterally and the focus has shifted to the more difficult area of multilateral action. A truly effective series of controls that will significantly affect Soviet oil and gas production and distribution will require a multilateral approach.

To control these goods and technologies, the Export Administration Act gives us two options: national security controls and foreign policy controls. It is extremely important to make this distinction between controls which are applied for national security reasons, which, incidentally, have largely been applied multilaterally, and those which are designed to further policy objectives which by and large have tended to be unilateral in nature. Whether national security controls or foreign policy controls are used, the Export Administration Act of 1979 tasked the Department of Commerce with assessing the availability of foreign goods and technology with respect to both quantity and quality. Responding to concerns in business, Congress began gradually to amend the law to provide discretion to the executive in the application of export controls, especially those applied for foreign policy reasons.

When there was evidence of foreign availability, the intent of the law was clear. Congress did not want our export controls to cause U.S. industries to lose business to our competitors. Nor did Congress intend that sales of equipment and technology should be permitted to run counter to our national security and foreign policy interests due solely to foreign availability. These various dimensions of foreign trade must be balanced before decisions are made.

U.S. business community reaction to the changing pattern of licensing policies has been mixed. Certainly very few, if any, U.S. firms object to the basic concept of national security export controls, although there is often strong disagreement about which items are truly of strategic import. Foreign policy controls, however, are viewed far less favorably by the business community since by their nature they result in more uncertainty and are also largely unilateral in their application. Many companies have made the point that they are quite willing to play by the rules as long as they know what the rules are, and as long as the rules are not subject to constant change.

This administration understands these problems and will issue clear guidelines once the policy is determined. We have already taken the positive step to revamp our export licensing process. We have substantially reduced, indeed virtually eliminated the enormous backlog of cases which existed when the Reagan administration took office in January. At that time, there were roughly 2,000 cases backlogged in the pipeline. Today there are roughly 100 from that original 2,000 which are in excess of the statutory deadline.

In addition, we have instituted a tracking system so that we can readily tell at any given time where in the interagency process a given export license application is pending. Until recently this was not possible.

We are working toward a system of control that gives our companies clear guidance and a measure of predictability. Controls must protect our vital national security and our foreign policy interests while at the same time permit U.S. firms the opportunity to compete aggressively in the noncontrolled areas. The balancing of these two concerns is not easy and perhaps never a happy task, but I can assure you that business interests will be carefully considered as the administration formulates its position on Western participation in the development of Soviet oil and gas resources. We are developing through the interagency policy process an administration position on the Yamal, which when completed, will be discussed with our Western European allies and with Japan, and to the extent that it may involve recommendation for restraint, we will seek agreements so that such policy can be effectively applied with consistency.

Thank you, sir.

Senator PERCY. Thank you very much, Secretary Olmer.

Secretary Hormats?

TESTIMONY OF ROBERT D. HORMATS, ASSISTANT SECRETARY FOR ECONOMIC AND BUSINESS AFFAIRS, DEPARTMENT OF STATE

Mr. HORMATS. Thank you, Mr. Chairman.

I will spare the subcommittee a full reading of my testimony and simply concentrate on a few of the key elements.

First, I am delighted that you have decided to hold these hearings because the subject is one of great controversy both in the United States and in certain quarters in Western Europe as well. I think that focusing attention on the basic issues and getting them out in public does everyone a service, because this helps to clarify the real problems and also to deal with some of the apprehensions that a number of people have about this issue.

Let me state at the outset that our strong concern is that this project crosses the threshold of a prudent level of European dependency on Soviet gas. But because the Europeans see this project as enhancing their energy security by permitting them to diversify away from oil and unpredictable suppliers thereof, our simply objecting to the project and leaving it at that would be an inadequate response. We therefore plan to suggest to the European countries alternative ways in which European energy security can be enhanced, including measures they can take on their own as well as those on which we and they can cooperate.

Deputy Secretary Davis has indicated a number of those potential measures.

The concerns we have about the Siberian pipeline are numerous and I will get to those toward the end of my presentation.

It might be useful to go very briefly through some of the reasons for European interest in this project, so that we can better address how we deal with European concerns. This is an important element of our policy response.

First, it is quite clear that there has been a major increase in interest in natural gas since the early part of the 1970's. This largely results from two factors. One is the oil embargo that took place in 1973 and the instability of the oil market throughout the decade. I have provided the committee with a number of charts [1] and chart 2 has a map of oil flows to Western Europe in 1980 and illustrates the high degree of European dependence on exports coming out of the Gulf.

In that respect, European dependence particularly on these areas of high unpredictability is greater than that of the United States, which has more diversified sources of energy. Imported oil is not as large a factor in the American energy scene as it is in Western Europe. The second reason for the European interest in natural gas in general is its price advantage. The natural gas price per Btu equivalent is about half that of oil. Table A, which is attached, gives you some idea of the price benefits of gas relative to oil throughout the period of the 1970's.

There has been a dramatic increase in use of natural gas. The volume of gas used in Western Europe has gone up by about 50 percent between 1973 and 1980, and that far exceeds the increase in overall energy use. In the residential and commercial sectors, gas use has gone up during that same period by roughly 30 percent. This wouldn't be such a problem if it weren't for the fact that the European situation with regard to supplies of natural gas is somewhat bleak over the longer run. Imports have gone up from about 5 percent of consumption in 1973 to about 16 percent in 1980. It is expected that Europe's resources are limited to about 19 years at the current rate of use, and that after that period of time they will drop off considerably and the Europeans will begin increasingly to have to rely on imported natural gas.

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[1] See p. 63.

The bleak supply situation is coupled with conservation policies which consciously restrain exports of natural gas—indeed, natural gas production itself—in such countries as Norway and Holland which are the major internal European suppliers of natural gas.

Recognizing that the Europeans are more concerned about diversifying away from oil and unreliable Middle East suppliers, and that they have begun to rely more on gas, they then, if they are going to do that, have to look more and more toward imported gas and foreign sources of gas, which are attractive from their point of view.

It is quite clear that in looking for foreign sources, the Soviet Union appears on the face of it to be a relatively tranquil supplier for a number of reasons. First, you can transport the gas through pipe rather than through cryogenic tankers, which are somewhat risky and expensive. Second, it is quite clear that to the extent the Soviets earn hard currency from the sale of their natural gas, they will buy, for the most part, products from Western Europe which is their major supplier. Third, the Europeans have a relatively depressed economic structure at this point, particularly in the steel sector. The building of a steel pipeline would be very attractive to a number of European firms who would like to increase demand for their products. There is also a sense—with which I do not agree—in some quarters in Western Europe that strengthening economic ties with the Soviets will in the longer run improve political ties and will lead to a more moderate Soviet posture on the world scene.

I think these are the real motivations behind what the Europeans are doing in trying to work with the Soviets on the pipeline.

From the point of view of the Soviets, the project is very attractive because they get a lot of financing, as Senator Cohen has indicated. The Europeans are in effect taking the large measure of the risk in the project. As to the Soviets, the expectations for Soviet oil production are that it will level off and that the Soviets will not be able to export as much oil in the future. With oil being a major foreign exchange earner, they are looking for another source of hard currency and natural gas fits into their plan.

As a matter of fact, this was highlighted in a recent statement by President Brezhnev which indicated the central nature of natural gas production in the next Soviet 5-year plan. It does loom very large in general, and the pipeline is a particularly important element in terms of foreign exchange earnings.

The economics of the pipeline are interesting, I think, and I won't dwell on them. Originally the pipeline was designed to transport about 4 billion cubic feet a day of natural gas, the equivalent of something over 700,000 barrels a day of oil.

Over the last couple of years, demand expectations in Western Europe have been scaled down somewhat. As a matter of fact, natural gas demand declined last year and the projection is for relatively soft demand in the future. Partly as a result of this, the pipeline has been scaled down to something in the order of 3 billion cubic feet per day, about 500,000 barrels of oil. Even with the scaling down it remains to be seen whether the gas can be sold at a competitive price. If the Soviets expect to get a price which is equivalent to the Btu price of oil, it is highly unlikely that gas will find much of a market in Western Europe. I believe that the discussions now taking place between the Europeans and the Soviets reflect to a degree the change in expectations about the market.

I think that if the Soviets insist on the higher prices that they seem to be insisting on, very little gas will be sold. I believe this price demand projection is having some effect on the way that negotiations are going now.

Let me touch on one last point, and that is the key question of vulnerability.

This is really our major concern about the pipeline—that it does create a much higher level of vulnerability than is comfortable from the point of view of many Western Europeans and from the point of view of the United States. Vulnerability is a hard thing to measure. In fact, simply rattling the saber a little bit can lead countries to take actions in the political or the economic area that they would otherwise not be willing to take. By rattling the saber, I mean rattling the threat of some sort of limitation on natural gas exports. The very concern about this limitation could lead to major pressures on Western European governments for a couple of reasons. First, natural gas is very hard to replace. Unlike oil, it is very hard to store natural gas. It can be done, but it is technically difficult and it poses certain risks and high costs. It is not as easy as building the strategic petroleum reserve.

Second, the vulnerability is very high among residential and commercial users. Residential users find it very difficult to diversify away from natural gas once they have the natural gas pipeline feeding to their house. Also, while some Europeans point to the fact that the gas will represent only 5 percent of their energy consumption, we have a chart here which indicates that there are regional disparities. In some cases the dependence in some regions will be considerably higher than 5 percent.

Bavaria depends now very extensively on Soviet natural gas and there will certainly be other pockets of high dependence. So this, too, is a problem.

Over the longer run, this will have a major impact in terms of policy pressures being brought to bear on European governments. One doesn't know what European governments will do in this situation, or what types of leverage the Soviets might want to use, but certainly the potential is clear and dangerous. There will be the feeling among those people who are dependent on this natural gas that their governments should not take actions which could in any way threaten the supply of that natural gas.

Well, as I said at the outset, our objective in this policy is not simply to tell the Europeans that this is a bad idea and to stop there. I think that as Europe's friend and ally, we have a broader responsibility, and that responsibility is to provide the Europeans with ideas and suggestions and options as to how they can come up with alternatives to Soviet natural gas, which serve their interests as well as, if not better than, the Soviet natural gas pipeline.

We have been working under the leadership of Mr. Davis and the Department of Energy. A lot of work has gone on to develop some ideas for alternatives. We intend to present those to the Western Europeans sometime in the fall. We plan to make our suggestions known, to make our concerns known, and to try to work with them in a way which enables us to deal with this problem in common.

The last thing we want to do is to treat this issue in such a way that it weakens ties between the United States and Europe rather than strengthens them. I think the approach we are pursuing now will be designed to put forward our strong concerns, to put forward our suggestions, and to help Europe find ways to minimize its vulnerability both to Soviet energy and to Middle East energy.

Thank you, Mr. Chairman.

Senator PERCY. Thank you very much.

I would like to comment that I think all of your testimony is really going to be a very solid help to a great many people who have been looking for the definition of the Reagan administration's policy. Throughout my public life and business life, I have detected a tremendous amount of frustration in the business community abroad and here at the lack of a clear policy. They have been frustrated because they see other economies strengthening themselves at our expense. I talked to Japanese and European business people which applaud our Government policy—just an open door for them to do business, unimpeded by competition by us in many areas. They literally cannot understand it. They virtually laugh at us. This is a tough, hardheaded, practical approach.

Secretary Davis, with your responsibility as Deputy Secretary of Energy, and your former responsibility as a top executive of one of our great companies, Bechtel Corp., and Lionel Olmer, Under Secretary of Commerce, former top executive of Motorola Corp., and the very practical business and economic outlook that you, Secretary Hormats, have put on the formation of the package of energy alternatives to the gas pipeline to the Europeans, have given very welcome testimony. I appreciate it very much indeed.

We did want to have the Department of Defense here. We had invited the Under Secretary of Defense. Both he and the Deputy in this area had to accompany Secretary Weinberger to Europe this morning.

The Department of Defense has, however, submitted a statement for the record.

[The statement referred to follows:]

PREPARED STATEMENT OF RICHARD N. PERLE, ASSISTANT SECRETARY OF DEFENSE FOR INTERNATIONAL SECURITY POLICY

Mr. Chairman: I am pleased to appear before this committee today to discuss the views of the Department of Defense on the security implications of the proposed pipeline to convey Soviet natural gas to Western Europe. Having spent more than 10 years preparing for hearings such as this from your side of the table I appreciate more than most the value of a full exchange of views between our two branches of government. It is a process of mutual education, a sharing of ideas and analysis and concerns. I am convinced that the public policy that emerges from hearings such as this, and from consultation between us generally, is better and more balanced than either of us could expect from acting alone. In the course of this hearing I shall share with you some of our concerns. But I am also here, at your kind invitation, to learn—and hopefully to understand—your own thinking on this important issue.

The Department of Defense is concerned—seriously concerned—at the effect of increased Western dependence on Soviet energy on the strength and cohesion of the Western Alliance. We believe that the increasing dependence of our European allies on Soviet energy, and especially natural gas, will weaken the alliance politically and militarily, shifting an already adverse military balance still further in the direction of Soviet advantage and threatening the unity of purpose on which our collective security ultimately depends.

Before I explain our concerns in more detail, I want to take a moment to comment on the attitude of our allies toward this issue. In the final analysis it is upon their judgment that decisions to contain or expand their dependence on Soviet energy will turn. We can advise, we can explain, we can take action that will make the costs of Soviet energy higher and the costs of non-Soviet alternatives lower. But we cannot decide the energy policies of France or Germany or the Netherlands in Washington, D.C.

The oil embargo of 1973 stunned the Western industrial world. It brought home, with an immediacy that grave forecasts were never able to summon, the danger of reliance on a small number of suppliers who were willing to use their near monopolistic market position for political as well as economic purposes. Together with increasing energy prices, which have made previously prohibitive energy development projects commercially attractive, a desire to reduce dependence on OPEC has been the driving force behind the search for diversified sources of imported energy.

In their desire to diversify, it is hardly surprising that our European allies should consider increasing their import of energy from the Soviet Union. After all, it was for several years American policy to encourage trade between East and West in the belief, now so demonstrably mistaken, that as trade increased Moscow's hostility would diminish. Moreover, it seemed like a natural symbiosis: the Soviets had large unexploited reserves of natural gas but lacked the technology and capital to develop them. The Europeans had the capital and some of the requisite technology, but lacked the reserves. Moreover, the Soviets had become desperately short of hard currency reserves with which to finance imports (including high technology and grain and capital equipment) from the West, while the Western economies were searching for new outlets for their products.

In short, the logic behind large scale Western investment in Soviet energy seemed self-evident; and it began to gather momentum. In all of this there was, and is, an important political dimension. Many Europeans, particularly of the Left, saw the emergence of an energy relationship with the Soviets as a useful device for fostering détente; and détente, in turn, was seen as a process that could transform an essentially hostile relationship between East and West into a more cordial, and less volatile political arrangement that would lessen the need for burdensome defense budgets. In Germany especially these elements fit neatly together with the political vision of the left wing of the Social Democratic Party—a vision captured by the German term, "Ost Politik," which had become a prominent feature of German socialist politics.

In describing this European view of the matter I used the past tense deliberately. For much of the seeming logic of the situation has changed; and it has changed much faster than attitudes that were rooted in it with the result that the case for broadening the Soviet-European energy relationship has grown much weaker at just the moment that deals long in the making are finally crystalizing.

What has changed? And how do these changes bear on the way we ought to view such large energy projects as the West Siberian Pipe Line?

First, the sense of urgency that accompanied the search for additional sources of energy in the aftermath of the 1973 embargo and through several years in which supplies were short has given way to the relative calm of the current situation in which there is something of an energy glut. Rising prices have both diminished the rate at which the demand for energy has been growing, and they have stimulated new exploration and new technologies that promise to relieve the market pressures of the mid-1970s. No where is this more dramatic than with respect to the demand for natural gas in Europe, which actually declined by 4 percent last year after several years of rapid growth.

Second, the notion that an increased volume of trade would lead to a lessening of political conflict and diminished Soviet emphasis on military power has been disproved. Political conflict has continued, largely unabated. The growth of Soviet military power has been relentless. Afghanistan has been invaded and continues to be occupied by Russian troops. Poland struggles to find a workable internal political order in the shadow of Soviet, Czech, Hungarian and East German divisions. A yellow rain of toxic agents has descended on hapless tribesmen in Southeast Asia. The principles of relations between the United States and the Soviet Union that were documented in treaty form in the heyday of detente have been transformed beyond recognition and have come, in reality, to resemble nothing quite so much as the Soviet policies of the Cold War. It is simply no longer convincing to suggest that trade will moderate Soviet behavior or deflect it from its build up of military power. If anything, the reverse has proven true: increased trade has enabled the Soviet Union to accomplish its military expansion faster and at a lower cost as Western technology and industrial assistance has become increasingly available.

Third, the notion that the West lacked energy reserves to exploit and was compelled therefore to turn to the Soviet Union to diminish dependence on OPEC has been disproved—first by the development of North Sea energy resources by the United Kingdom and Norway, then by the emergence of a large number of new potential sources in such places as the Netherlands, Nigeria, Canada, Alaska and the United States. It now appears questionable whether Western Europe needs to import natural gas from the Soviet Union on anything like the scale of the West Siberian Pipeline's 35 billion cubic meters per year, if, indeed, there is any requirement at all for turning East to satisfy Europe's requirements.

The Department of Defense has a number of specific concerns about the security implications of the West Siberian Pipeline. Let me enumerate them.

First, it will generate substantial hard currency earnings for the Soviet Union that will finance a number of Soviet developments inimical to our interests. With the pipeline in full operation, several billion dollars annually will flow into the Soviet treasury; $5 billion per year in constant 1980 dollars is a minimum estimate; and it could go much higher. A significant part of these earnings will go to strengthen the Soviet military. These revenues will facilitate the purchase in the West of sophisticated Western technology, much of which will support the modernization of the Soviet military-industrial establishment.

Second, the revenues available to the Soviets will help to forge an economic link with Europe that will inevitably increase Moscow's influence among our allies. There is not a Senator on this, or any other committee, who does not feel an obligation to do what he can to promote the well-being of his constituents. That is as it should be. But the same holds true of governments and parliamentarians in the democracies of Europe. A centrally controlled economy like the Soviet Union can place orders where it likes. And where jobs and profits in Europe emanate from Moscow, it would be naive to believe that politics will stay far behind. And this will hold true, day to day even when the gas is flowing without interruption from fields in Siberia to homes in Bavaria.

Third, we believe that Europe will incur a dangerous vulnerability to the interruption of supplies of natural gas from the Soviet Union. Gas pipelines create dependency because they are dedicated facilities, tied into an elaborate infrastructure of delivery networks and distribution facilities. A significant proportion of the gas that will flow through the pipeline will heat private homes in the recipient countries, especially Germany. In some regions virtually all the homes and many industries will lack reliable substitutes for Soviet natural gas. Unlike oil or coal, for which there exist spot markets that can respond to short-term requirements, there is no ready alternative to fixed and long term supply arrangements with respect to natural gas delivered through dedicated pipelines.

The dependency about which we are concerned will reach significant proportions, especially in some regions. With the pipeline in operation, some 30 percent or more of the natural gas consumed in Germany will come from the Soviet Union. That, in our judgment, is a dangerously high level. We have to anticipate that, in a crisis, the Soviets might interrupt the flow of gas to achieve political purposes. They have done so before as the Israelis, the Yugoslavs and the Chinese have learned to their regret. Even as I speak the Soviets are bringing political pressure to bear on Poland through a combination of political, economic and military means. Among them has been the manipulation of energy supplies to Poland as the temperature drops toward winter and Polish industry must plan its Winter production.

But even in the absence of a crisis severe enough to lead to a Soviet cut-off, there is the day to day influence that must flow, like the gas itself, through a pipeline to which there will be no practicable alternative. Practical men will find alternatives to angering their suppliers more easily than they will find new ones. Whether one calls it sensitivity or solicitousness or simply "reality," is there any doubt that our allies listen more carefully to Kings and rulers who supply them with energy than to those who do not?

Fourth, we believe that, in addition to the political and energy vulnerability inherent in the West Siberian Pipeline there will be a weighty financial vulnerability as well. Virtually all the risk associated with the substantial capital investment in the project will be borne by Western banks. Their loans, which are heavily subsidized by interest rates on the order of 7.5 percent will be repaid from downstream earnings from the pipeline itself. The creation of a community of interest between Western banking circles and the Soviet government is hardly what is needed to arrest the troubling neutralist trend we detect in some European countries. Moreover, the fact that Western banks rather than the Soviet government will bear the risk will put the Soviets in a commanding position with respect to any re-negotiation of terms in the out years. My bank has rather a lot of influence on me as one of its smaller customers. Its largest industrial borrowers have rather a lot of influence on it. This is a commonplace that we understand well at home. It applies as well abroad.

Fifth, a capital project on the scale of the West Siberian pipeline, along with Soviet capture of a significant European market, will displace potential investment in safer, Western alternatives. Projects in Nigeria, Algeria, Norway, Cameroon, Canada, the United States will all be less likely to attract the capital they need and acquire the markets they could otherwise develop if the pipeline goes forward. We believe it would be safer and better to strengthen the bonds among friends rather than deepen Western dependence on our adversaries.

Finally, we have serious doubts about the economics of the West Siberian Pipeline. While the final price negotiations have not yet taken place, we believe that there is a serious chance that the German housewife in the long run will end up paying more for Soviet gas than she would have to pay for available alternatives. The infusion of politics into the bargaining will deprive market forces of their leveling influence. The Soviets know it and can be expected to make the most of it.

Mr. Chairman, in closing, I should say a word about what we believe ought to be done. The President at Ottawa made known our concerns. This Administration is opposed to the West Siberian pipeline and has tried, although not always with blinding clarity, to make that opposition known. We can and should do more. We have offered to discuss alternative supplies and to work to develop them. In some places, this offer has been peremptorily rejected. But in others, we believe there is still room to make our case.

Moreover, we can, and in my judgment should, withhold American technology from the pipeline in every case where such action will underline our opposition and make available alternatives more attractive. If we fail and the pipeline is built, we will have to redouble our efforts to contain the diffusion of advanced technology to the East that is certain to follow from the greatly increased hard currency the Soviets will find at their disposal.

Senator PERCY. I would appreciate perhaps from you, Secretary Hormats, a clarification as to the degree to which now Commerce, Energy, and State are speaking for the administration. Have you resolved the problem inside the administration and is this position that is being given to us this morning an agreed-upon position, that the National Security Council, for instance, would be supportive of if they were brought into it?

Mr. HORMATS. Thank you,, Mr. Chairman. We have had a process of very close coordination among the three agencies represented here and the Defense Department since the major guidance was provided on this, just prior to the Ottawa economic summit.

We have been working in very close coordination with one another. I am fully confident that the presentations we have made here reflect faithfully the decisions which were made at the highest levels of our Government prior to that summit. What we are doing in effect is carrying out those decisions. So I think there is a consistency between what we said and those decisions. I feel comfortable with that.

Senator **Percy**. A follow-up question on that—I do think the administration is very realistic about the pipeline deal. I have talked at length with Arthur Burns about his strongly felt views. The press reports have indicated that agreements have actually been signed between the Europeans and the Soviets on both financing and purchase of some equipment. There are those who would rather see us state our absolute opposition to the pipeline even at this late stage, however. Let's just suppose that even though the deal is going forward—may in fact have been signed—that we did state our adamant opposition to the deal. What would be the chances that the Europeans would go ahead anyway? Do you agree with me that complete opposition at this point would be really overplaying our hand, a tactic that would leave us looking at alienated allies if nothing sells. Here is a deal where we really, as I said in my statement, have to walk in the shoes of the Europeans. We have to see it from their standpoint. We have a commonality of interest. We have common defense. We have many common goals and objectives, but they cannot always see exactly from our viewpoint. They have got their sovereignty, their own national interests, that must be preserved and protected, as has been evidenced many times through the years.

Whether it is General DeGaulle speaking for France or whether it is someone else speaking for another European country, that is what a partnership is, seeing it in each other's eyes, and accommodating ourselves to each other's point of view. We cannot always be calling the shots because that is not a real partnership. What would happen if we just took a rigid opposite position to this deal?

Mr. **Hormats**. I think, as I said at the outset of my testimony, that simple to oppose the pipeline and leave it at that, without proposing alternatives, would not be seen by the Europeans as sensitive to their concerns about their vulnerability to Middle Eastern oil which is one reason why they have pursued this project and would have little effect.

To convey our concerns about the project and to provide suggestions for ways in which they can avoid dependence on the Soviets and reduce dependence on the Middle East at the same time—which is what our objective is—constitutes a more meaningful response and one which is consistent with the importance of the overall alliance we have with them. I think our action in the long run will be seen by them to be the basis for a dialog which can help deal with the problem.

Senator **Percy**. Secretary Davis?

Mr. **Davis**. I would like to support what Mr. Hormats has said. I think we are certainly not trying to take the position of telling our friends and allies in Western Europe what they should do or must do. I think what we are trying to express is a feeling—as sort of independent observers—that what we see is a significant change in the situation between the time the project was originally proposed and the present time. I think several of us have commented on the fact that there have been some changes in both the supply possibilities and the Western European demand, and this has led us as sort of outside observers to discuss with the Western allies the fact that we are more concerned now about the demand for gas, about the vulnerability of oil and gas from the world market as we now see it for the late 1980's, and we are a bit more optimistic than we were before.

We really want to call to their attention some concern about the price leverage that the Soviets will have, about the potential economics—although we are not aware of the details, the whole situation seems as though it needs sort of a prudent re-examination, which is what we would like to suggest, without trying to tell them how they ought to do it.

Senator PERCY. Secretary Davis, on page 8 of your testimony, you indicate that price controls on most domestic gas will be removed if the Alaskan pipeline is completed and that gas price deregulation will help stimulate domestic production, increased efficiency, and enable the United States to decrease both oil and gas imports.

Obviously this is a very volatile question, one that I am very sensitive to in a State that has well over 50 percent of its home heating by gas. We are studying the severe impact it will have on individuals. The Alliance to Save Energy met last night and Stuart Eizenstat sat with us for 4 hours while our board of 28 members debated the question, should we recommend deregulation of gas prices? The vote was 25 to 3 for deregulation. We exhorted people to conserve. We have said it is patriotic to conserve, but we could have said you save money. The dramatic results we have had in driving down imports from 8 million barrels a day to 5 million barrels a day is really largely attributabe to deregulation. It has stimulated production. It has put a true value on oil. We are not subsidizing gasoline and oil prices any longer, as we were for so many years.

The market price simply had to be set.

What is the administration thinking about deregulation of natural gas? Are you going to follow the present program which would have us deregulated by the time this pipeline would be built or is there thought about accelerating that process, stimulating it at any point, to achieve the objective that you properly say can be achieved?

Mr. DAVIS. I am sure as you know, Mr. Chairman, the President has not made the decision as to just what he might elect to do with respect to the accelerated deregulation. Basically the thought that we have had is that deregulation would not necessarily be accelerated in the sense of time, but in the sense of trying to use a more realistic target price for the changes in the gas prices between now and 1985. We would also probably suggest including old gas along with new gas as a part of that deregulation. So that by 1985 one would end up with all gas deregulated at the wellhead, and that this would, we think, substantially decrease the imports of oil into this country, and would stimulate considerable extra gas production in the country over some period of years.

This is the general thrust of the proposal, but as I said, there has been no decision as to what to do about it so far.

Senator PERCY. Secretary Olmer?

Mr. OLMER. Mr. Chairman, I would like to return to the dialog with Mr. Hormats and Mr. Davis which you had just before the question on decontrol.

I would just like to make two or three comments regarding the process by which we hope to acquire Western Europe recognition of their own self-interest and agreement with our view as to the unadvisability of increasing dependence on Soviet energy.

In the first place, U.S. policy toward the Soviet Union can't be dictated by Western Europe's desire to have Russian gas nor for Western Europe's desire for access to Soviet markets for Western European goods. In the second place the Yamal represents between 10 and 15 percent of the total Soviet plan for expansion of natural gas pipelines throughout the Soviet Union in the most recent 5-year plan which has been reviewed by us, that is to say, they intend to lay perhaps as much as 85,000 kilometers of pipe. The way in which they will pay for that is through hard currency earnings which are available to them largely from the West and from the markets which are created for the construction of goods and services connected with the Yamal.

Finally, I would like to point out that the difficulty of completing the Yamal pipeline should not be passed over lightly. It is an enormous project the proportions of which we perhaps don't fully understand yet. It can't be done in my judgment without U.S. expertise learned the hard way in the Arctic conditions in which we built the Alaska pipeline. There are few other sources of expertise available in that area. Admittedly most of the equipment which is required for the completion of the Yamal distribution system is readily available through a number of foreign suppliers. But there are particular components thereof and certainly in the overriding area of experience the United States does have a unique capability. Those are the three comments that I wanted to make.

Senator **Percy**. Thank you very much.

The last question then that I would like to ask at this time is of Secretary Davis because I know you have to leave shortly. I do strongly support a free market energy policy, but when we are taking about national security we can't always count on the marketplace to move quickly enough. Do you expect that the market can work fast enough to make U.S. coal exports a viable alternative to Soviet gas? And I say this looking upon myself, as I am sure Senator Glenn looks upon himself, as the No. 1 export sales manager for coal from Illinois, in my case, and Ohio right here. I never learned so much about coal in my life as I have in the last few years serving on the President's Coal Commission, but we just have a huge export potential here that must be developed.

We are hosting lunch for the King of Spain today. Spain placed in Southern Illinois—at a coal conference that I sponsored down there—the first order any European country has ever placed for Illinois coal, $5.5 million for high sulphur coal for their cement manufacturing industry where they need to buy this type of coal.

I wish we had more cement plants around the world. But I did mention in my comments some of the problems we face, with the railroad facilities, port facilities, and so forth. How do you foresee our potential to really get behind this effort and export first, Illinois coal; second, Ohio—or West Virginia, blood is thicker than water—but certainly third, Ohio coal and really get into this business. [Laughter.]

The figures you gave this morning are remarkable figures on what we have accomplished and done. We are way ahead of our goals. But can we even now move faster in this area?

Senator COHEN. Mr. Chairman, you left out Maine potatoes for methanol plants. [Laughter.]

Senator PERCY. That was obviously in mind. I just forgot to mention it. [Laughter.]

Mr. DAVIS. Mr. Olmer might like to comment on this, too, but I think in a general way I am very optimistic. As I mentioned, I participated in the world coal study that made the projections that are already being exceeded. Some people thought we were pretty optimistic when we put that report out. I am very pleased that that is happening. I think we have seen already a very great rush to build export facilities to handle the coal; there is even some talk now about building other ones on the west coast.

There seems to be every indication that the industry is stepping up to the problem of mining the coal, transporting it, building facilities and exports. There are still some problems with respect to some of the transportation facilities and with respect to some of the areas available to mining. But, the recent increases in both the production of coal in the United States and the export are now beginning to match some of the things people thought a few years ago. There are problems, but I think we can solve them. I think we can supply as much coal as people want to buy.

The problem that is more significant may be in Europe, for example, in getting them to switch to the use of coal. That has gone pretty well in this country. They have got to do that part themselves.

Senator PERCY. Secretary Olmer, did you want to comment?

Mr. OLMER. Yes, Mr. Chairman. I think what we are witnessing is the operation of the free market system in all of its grandeur; demand is forcing the development of capacity to produce and export. I have a couple of interesting numbers. For the first half of 1981 in the export of U.S. steam coal to Europe, France has doubled, the Netherlands has tripled, and Spain has tripled as well. We do see the development in a fairly short period of time of sufficient facilities to mine, transport, and export from the United States sufficient quantities of coal, perhaps to reach that target number of 100 to 200 million tons by the end of the century. The answer to your question is "Yes, we are optimistic."

Senator PERCY. I think all of us want to work very closely with you in this tremendous responsibility you have in your office of coordinating export coal policy regardless of where the coal comes from. We have the reserves in this country. We have got the coal.

Senator COHEN. Senator Glenn has very thoughtfully suggested that we do change our usual policy and have you go first so that he will pick up after that. He does have, however, a question or so for Secretary Davis.

What is your time frame, Secretary Davis?

Mr. DAVIS. I will leave whenever.

Senator PERCY. That is fine. Thank you very kindly.

Senator COHEN. Thank you, Mr. Chairman.

I think, Mr. Davis, your point about the Europeans being somewhat less enthusiastic about coal development than we are at this particular time also touches upon the European antinuclear movement as well. I see it as much more extensive than that as far as the Soviet Union is concerned. To the extent that they can exploit the antinuclear movement with a nuclear free zone sentiment in that part of Europe they will do so. To the extent that they can exploit the so-called green movement in West Germany, they will do so.

Certainly they will support the movement toward the Soviet Union as far as the purchase of gas supplies. So I am not quite as sanguine about the possibility of opening up new markets for coal or nuclear technology, which you indicate the United States is now reentering that particular market. I think, from the Soviet point of view, they will do everything in their power, through the press and through whatever propaganda they can spread to discourage Europeans from moving toward coal or nuclear technology, thereby heightening their reliance upon natural gas.

Let me just say, in response to what the Chairman was suggesting, that I appreciate the fact that our European partners believe in a partnership, not a dictatorship coming from the United States. But I think what they resent, more than being dictated to, is being asked to follow an inconsistent policy. The fact of the matter is that we have had no coherent policy with respect to trade or technology transfer for the past 10 or 15 years.

In fact, the New York Times front page story this morning talked about the great gaps that still exist in formulating any kind of effective policy preventing the sale or transfer of high level technology to the Soviets or to the Eastern bloc countries. I think that our European allies have a somewhat legitimate case against us, since we have the so-called Co-Com list and we in the United States have requested 60 percent of the exceptions to that list. So we don't really serve as much of a standard in trying to define and determine which products, which technologies, will or will not go to the Soviet Union.

Again, this is kind of an inconsistency. I applauded Mr. Reagan's statement in Ottawa. He expressed his very deep and strong reservations and concerns about the construction of this pipeline. Unfortunately, about 10 days later, the administration approved the sale by Caterpillar Tractor of 100 pipelayers to the Soviet Union for the construction of oil and gas pipelines inside the Soviet Union. That was a signal, I think, to Japan, once again. Japan had at least exercised some restraint at that point. The signal said, well, the lid is off, the United States has decided to issue these export licenses for this particular use, although not on the Yamal pipeline; therefore, we can follow suit.

With respect to dealing, I am just going to give you my particular thoughts about this. But with respect to dealing with our allies, I think we have to be not more understanding about the complexities of it, but rather more straightforward. For example, I will single out Japan.

Japan has complained in the past about the presence of the increased Soviet naval presence near its shores. Well, the fact of the matter is that Japan built and sold to the Soviet Union one of the largest drydock facilities in the world, which helps the Soviet Union maintain that naval presence off their shores.

Taken to a different level, President Reagan said about the assassination of President Sadat that it was an act of infamy. That statement was covered in one of the national magazines this week. I happen to feel that Japan's invitation of Yasser Arafat, coming in the wake of the assassination and Arafat's statement that "we kiss the hand or the fingers that pull that trigger," was an act of infamy.

Obviously, Japan sees it in its own interests to make whatever accommodations or establish whatever relations it can with the PLO—the Palestinians—because they want to see that there is a continuation of the flow of oil into Japan. I would suggest that that example of continuing the invitation in the wake of an outrageous statement would indicate what will happen with West Germany in the future as well if the West Germans become 30 percent dependent for natural gas or perhaps even 40 percent dependent for natural gas in some part of Bavaria, on the Soviet Union. Then I can predict to you what the response is going to be if the Soviets decide to invade Poland. The question will then not be one of Western outrage. Rather, the West Germans will, in my judgment, say, well, after all, Poland is part of the Soviet sphere; after all, Poland is vital to its national security interests; after all, it is a matter of local interest; after all, it is none of our business; and after all, let's just keep the gas flowing.

It seems to me we are seeing an indication of that on a different level right now taking place with the Middle East. I suggest to you that will only become heightened and exacerbated when and if that line is, in fact, constructed.

I could carry on like this and tell you my own views, but I would really like to ask you this question: I believe Mr. Olmer, you said the United States was the only country that had the technology to really insure the construction of that pipeline. Is that correct?

Mr. OLMER. That is right, sir. It is my feeling that only the United States has actual hands-on experience in the construction of a pipeline of that magnitude under the conditions which Yamal will have to be constructed—specifically our experience in the Arctic.

Senator COHEN. If the United States were to say that under no circumstances do we intend to participate in the construction of that pipeline, what would that do to the construction?

Mr. OLMER. Probably delay it.

Senator COHEN. For how long?

Mr. OLMER. I don't think it would necessitate a cancellation. I think it would be a matter of harassment and delay.

Senator COHEN. What other countries could fill in the gaps that would be left by the United States?

Mr. OLMER. In chart 3 of my prepared remarks, I provided a chart of the equipment necessary for a pipeline distribution system, and the countries which had the technology to produce and supply it. You will note that there are relatively few areas in which the United States has any unique technology or ability to deliver. The one that I called attention to was Arctic construction technology which is in essence hands-on experience. Some of the equipmentw hich we have seems to be better suited for Arctic conditions than the competition from Japan is capable of providing.

In relatively few other areas do we have the ability to provide the Soviets with the only source. I mean, we are not the only source. If you look at the area of large diameter pipe, the United States is not a supplier of the 36-inch diameter and larger pipe, which is required in such enormous quantities and which I might point out is exported in large quantities from West Germany. West Germany exports about

30 percent of its steel output. Some 11 percent, I believe, goes too the Soviet Union alone. Mr. Hormats referred to the employment situation in Western Europe and I would emphasize that. In West Germany's eyes, it is perhaps a duel dependency: the need for employment; access to Soviet raw material.

Senator **Cohen**. I can appreciate that, but what I frankly find objectionable is that the United States is being asked to pick up a very large share of the defense of Western Europe and Japan, while those allies of ours feel free to exploit the economic opportunities of trade with the Soviet Union. So they can have it, in essence, both ways. We pay for defending them while they exploit the opportunity for trading with the Soviet Union.

Frankly, I don't think that can be allowed to continue. While I appreciate everything that you gentlemen have said this morning, it ultimately comes down to words that we are floating, and not any deeds that we can really pursue or accomplish, in my judgment. We can't just talk about our concerns and yet not be in the position to develop the alternative, saying we are going to offer you coal, we are going to help with nuclear technology. It seems to me they are going to look at that, say sorry, we have our own environmentalists, we have a burgeoning relationship with the Eastern bloc nations and, frankly, we don't like all the talk about challenging the Soviet Union to an arms race. We are not so sure about TNF, and we are moving in this direction. You can carry your dialog from across the Atlantic.

So I don't see our words being particularly effective in this case, because they will look to see what we are doing. The moment we talk about taking a hard line, that we are opposed to it, then we license the export of Caterpillar tractors. This, I think, is what gives substance to the Western allies for moving away. They say, you see the United States talks on the one hand, and they do quite differently.

They say the United States is just as interested as we are in competing for the construction of that pipeline or selling technology or doing whatever, because their own business interests are dictating their policy concerns. So, I am not terribly optimistic that the United States is going to be able to do much, because we don't have a policy. We still don't have a policy which is multilateral, as I think you or Secretary Davis mentioned. We can't do it unilaterally, and we don't seem to have much of a basis for acting on a multilateral basis.

So, I am not terribly optimistic that we can express our doubts, warning them about their overdependence. In fact, the trend is quite in the opposite direction.

Mr. **Olmer**. Senator, each of us has mentioned the Ottawa summit and President Reagan's remarks to the summit participants. Perhaps we neglected to emphasize the response from the participants which was to welcome the opportunity to discuss with the United States the expression of concern and the willingness to enter into a series of discussions which might lead to a more effective multilateral system of controls on high technology in particular, as well as the question of the Yamal pipeline.

I might just add one more point to assuage some of your concerns. In the process of doing our own Commerce Department evaluation of the extent to which the United States could delay construction of the pipeline, we have talked to a number of pipe suppliers and construction experts. When we gave them the estimate of 3 to 4 years for construction of the Yamal pipeline, one of them responded with "hogwash," that that pipeline, the way in which it has got to be constructed under those conditions will take a minimum of 5 years and probably 7.

Senator COHEN. Have any of our allies ever stopped to question why the Soviets can't develop their own technology to exploit and develop that resource?

Mr. OLMER. I am sure they have, but I don't know with what result. Perhaps Mr. Hormats could respond.

Mr. HORMATS. No; I don't have any firsthand information. I think that the basic reason they want the technology is because we do it better. They have built pipes in the tundra area, somewhat farther south than this, but this is probably somewhat farther into the permafrost than they have done before.

Senator COHEN. Is it fair to say that we do it better because they have been devoting such a disproportionate amount for building weapons? I mean if they were, doesn't it get back to that fundamental policy decision, do you thereby decrease the pressure on the Soviet Union to move some of its resources and assets into other nondefense technology—let them continue to put all the billions into missiles while we supply the technology?

Mr. HORMATS. To the extent you provide the financing and equipment, it enables them to do that. The resources which would have been used for this can be used for other things. We cannot speculate on what they are going to use them for.

Senator COHEN. The figures that I have show that the Soviet Union and its allies have piled up a debt of about $82 billion, no collateral for these loans, simply paper IOU's, which will probably not be paid and not be called. It is sort of like, you know, you go in to borrow, not $100, but $1 million, since the chance of it being foreclosed on you are slim.

Mr. HORMATS. There is an enormous financial vulnerability. You are right. The basic risk of this whole thing is being borne by the Europeans. The Europeans in fact are selling the pipe, financing it, taking the brunt of the burden of the risk of nonrepayment.

Mr. DAVIS. If I may make a comment, I think that it is unrealistic to expect that the technology or withholding the technology will prevent the pipeline going ahead. The technology of building pipelines, in terms of the actual construction in these far northern areas, is pretty generally known and the Soviets in fact have built pipelines, not of this size, but in the same area. What is important is the equipment. I think that it is sort of a quid pro quo among other things, but the supply of the pipe, equipment, instrument systems and so on is something that is important and does involve technology. It is primarily equipment, not know-how.

As Mr. Hormats has said, in our view, the principal point is not the technology, it is not the equipment. It is really the financing and the various risks associated with it. That is where we think not only is our perception perhaps different, but we think there have been some changes that ought to be looked at very carefully. We certainly would hope that there would be a pretty forthright presentation of our views to the Europeans, so they have no doubts about what our thoughts are on the matter, but we still should not be attempting to dictate what we think should be done.

Senator COHEN. What I am suggesting is that the denial of the construction of the pipeline would not, in fact, deny the construction of the pipeline, but would make it more difficult. It would force the Soviets perhaps to divert some of the resources that are going toward military purposes into developing their energy resources. I think perhaps the time has come for the Western countries to say, you know, we disapprove of the enormous increase in military expenditures that we have witnessed and we simply are not going to be a part of helping to finance or helping to develop your nonmilitary interests at our expense.

But what we see is fragmentation, confusion, the exploitation of economic—I was going to say lust, but that is too strong a word—interest on the part of Western nations. That is what I see as the very, very dangerous trend which I am not sure ever can be reversed.

Senator PERCY. Thank you, Senator Cohen.

Senator Glenn?

Senator GLENN. Thank you very much.

To followup, why did we go ahead and approve the Caterpillar sale? That equipment can be used directly for pipeline construction. Although Mr. Meyer Rashish, Under Secretary of State for Economic Affairs, said these particular pipelayers were not going to lay pipe for the Yamal network, they certainly free other machines for use on that.

Mr. OLMER. Senator Glenn, it was not an easy decision to come by, but in the calculations it was determined that these were replacement pipeplayers of the same character that had been provided in numbers approaching 1,000, and that with the Soviet agreement on a piece of paper that was in effect the export license, they would not be used in the Yamal network.

Senator GLENN. But isn't it true that they release other pipeplayers to be used in that network.

Mr. OLMER. I suppose in the final analysis everything relates to everything else, but this was the judgment that was made. It was a close call.

Senator GLENN. It just seems like we have been speaking with very mixed voices on this. We are against the pipeline, yet we supply equipment that will, at least indirectly, help build it.

We have heard about the Japanese being an alternative supplier of pipelaying machines. Now it was reported in the press that the President talked to Prime Minister Suzuki at the Ottawa Summit about this. Apparently Prime Minister Suzuki went home and put their deal on hold. Then the Japanese were apparently as surprised as anybody in the whole world when we went ahead and announced the Caterpillar sale. It doesn't make sense. We announced approval of the deal only 10 days after the Ottawa Summit, yet the Japanese received no advanced word I am told.

Mr. OLMER. I don't believe that under ordinary conditions or under these conditions that they would be entitled to advanced word. I am not aware of the conversations.

Senator GLENN. The Japanese would be entitled to advanced word after the President asked Prime Minister Suzuki not to go ahead with the sale.

Mr. **Olmer**. Senator, I am not persuaded that conversation took place. I don't know that it did or did not. I have read some press reports about it. But I have no official knowledge of any such discussions.

Senator **Glenn**. The press reported this in September, and I have heard no retraction or anything from the administration that indicates it actually didn't happen. So I presume that is what happened.

Senator **Percy**. Perhaps Secretary Hormats could clarify.

Mr. **Hormats**. I don't have any more enlightenment on that particular report about what happened in Japan. But I would say that if you look at the past with respect to pipelayers, the Soviets already had something on the order of 1,400 pipelayers, many of which—indeed most of which—were already supplied by the Japanese company, Komatsu. Our judgment—and it was a tough call—was that the pipelayers were replacement pipelayers, that they were marginal to Soviet needs, inasmuch as they already had 1,400 of them, and that the likelihood was that if these were not sold the only group that would lose would be the U.S. industry, Caterpillar, because they would be purchased from other countries, including particularly Japan.

Senator **Glenn**. We certainly need to orchestrate these things better. I know we are not here to discuss the grain deal, but Margaret Thatcher supported us in the European Community saying "Stick with the Americans." Then, without telling her, we started to sell grain. First, we put the restriction on because of the Soviet invasion of Afghanistan, then we take it off because the Soviets don't invade Poland. It doesn't make much sense, and I can't blame our allies for being very disturbed about what we are doing.

I would submit we are almost close to forcing the Germans into this pipeline. They are concerned about their energy security. They are anxious to diversify their energy imports away from the Persian Gulf and may not consider the U.S.S.R. to be less reliable than certain OPEC producers. It is not only OPEC producers who may be unreliable in their eyes, it may also be the U.S. commitment to provide security to the Persian Gulf.

Some staff people just returned from West Germany and they reported that the Germans were appalled to learn last week of Secretary Weinberger's statements about taking half of our carrier task forces out of the Persian Gulf. They thought we have been talking to them about assuming the bigger load in NATO because we were going to provide that security in the Persian Gulf. Yet we say, well, we don't have the money, and we have 13 carriers around the world, so now we are only going to have one in the Persian Gulf. We send very, very mixed signals in this regard. We are talking about providing security in the Middle East at the same time we are pulling out the real combat strength that is there to protect that area. So we send all the wrong signals to Europe it seems to me.

I know you don't come to discuss that particular issue. But let me get into one that does deal directly with what we are talking about today. If we are going to help them make certain that they have energy available, which should be an objective to us if we really were serious about asking them not to go ahead with this pipeline, then we should be working to make certain that we have optional energy sources available that we can share with them for their energy needs in case something happens in the Persian Gulf. Yet, what are we doing in that regard? When this administration came to office in January, the proposed Fossil Energy Research and Development budget was over $1½ billion. It was reduced by 76 percent, to $374 million.

In solar energy, the January budget was $576 million, and it was cut to $193 million, a reduction of 66 percent. The administration inherited a conservation budget of $922 million, and they cut it to under $104 million; they cut it by 89 percent. This is just extending our dependency on the Persian Gulf, while at the same time we reduce our security commitment in the Persian Gulf. I spent the better part of 3 years talking one-on-one to President Carter several times, and several times along with groups trying to get him to get our R. & D. energy budget up so that the Western world wouldn't be so dependent on the Persian Gulf. Yet we have vastly reduced our efforts to develop alternatives.

Why on Earth are we cutting back R. & D. that will give us the hope, in the future of energy independence from the Persian Gulf? Also, why are we cutting back on defense commitments in the Persian Gulf and then asking the Europeans to have faith in us. It just doesn't make much sense. I will elicit a comment from any or all of you on this.

Mr. Davis. I think your statements with respect to the budgetary changes are, indeed, factual I would submit that we are in fact continuing the research and development as such, which is aimed at developing the new energy sources and are also dependent heavily on the independent industry, as we mentioned earlier, to develop the mining, the exporting, the transportation of coal as well as the development of synthetic fuels. What we have eliminated to a large extent has been many of the grants, demonstration programs, and things of that sort.

Senator Glenn. Do we have any indication that private industry is moving now to pick up those demonstration projects?

Mr. Davis. Certainly, in the case of the synthetic fuels, as you know, we have approved three demonstration projects on gas and shale oil. The Synthetic Fuels Corporation is considering additional ones. All of the evidence so far is that independent industry is very much interested in pursuing these projects when they appear to be the kind that will lead to eventual large-scale facilities. I think the evidence is pretty good that we are moving ahead and will have alternative energy sources available, not in time to foreclose the pipeline because we are talking about something that is 7 or 8 years from now, but I think in the longer term we will have the energy that is needed.

Senator Glenn. What gives you that kind of confidence?

Mr. Davis. Maybe I am just an optimist, but I have been overlooking our program and I think we are going to get there.

Senator Glenn. Are you asking the Germans to be optimistic along with us?

Mr. Davis. I might point out that, as to synthetic fuels, a lot of that came from Germany.

Senator Glenn. That is very true. But when we have seen no move of U.S. business really to get into some of these areas that the Government is giving up, then I think we are asking for belief in something that may or may not happen. I think the Germans are not going to stake their national economy on something that skimpy.

Mr. DAVIS. I think we are still in sort of a transition period in getting industry to pick up some of these things. I personally think they will.

Senator GLENN. I am not for putting Government into areas of energy development that business is already moving into. But the areas of far out research that do not have an immediate commercial application is where I absolutely think Government has to be involved. I always use as a prime example the area of better research. If there is one energy wish I could have granted before high noon today, it would be that we come up with better means of electrical energy storage. Yet we cut back in that area.

Energy storage is an area in which there has been some private industry involvement, but not in the very basic, far out research that some of our Government laboratories have been into. Yet we are cutting our Government labs off in some of the most promising areas that would make electrical cars practical for that 92 percent of our noncommercial driving done within 20 miles of our homes. Practical electric cars would do more to lessen our dependence on foreign oil than any other single development, yet we are cutting research in the areas in which commercial companies are not willing to go into in the same magnitude as the Federal Government has been in the past. That is just one example.

I think we are almost forcing the Germans into this pipeline in self defense. I would say again that I support the need for a balanced budget, but not in these areas that are going to hamstring us in the future. Do any of the rest of you have any comments on this?

Mr. OLMER. Senator, perhaps I ought to leave well enough alone that you stopped your line of inquiry on the Caterpillar case, but I omitted to point out in my earlier response that Caterpillar had applied for and received in November 1980 a license signed by President Carter for the export of some 200 pipelayers to the Soviet Union.

The decision recently taken by President Reagan was taken in light of the fact that Caterpillar, as a very responsible American corporation, came to us and said the Soviets requested modification of the order. They only wanted 100 and they wanted it for a different place. So we asked pursuant to the previously approved application in attempting to deal with a company that had come to us forthrightly.

Senator GLENN. I didn't mean to make this a partisan thing, because I think President Carter sent some very mixed signals, too, but you can't cut off wheat for Afghanistan, and then go ahead and approve the sale of pipeline equipment. I think that sends very mixed signals.

The new administration came in prepared to review the Caterpillar decision, did review it, and came down with exactly the same decision. So any criticism I may have will be leveled in both directions, and not just at the current administration.

Mr. HORMATS. On another bipartisan note, in relation to your point that one thing we can do to deal with the overall energy problem in the world is to reduce our own dependence on imported energy, I would note that the administration has recently sent up, with strong support in the Senate, the waivers for the Alaskan Natural Gas Transportation System, which will enable us to tap what we know to be about 13 percent of the natural gas reserves in the United States and open up more exploration.

I think that is something, if it does move ahead, that can be a very powerful move to reduce our import dependence.

Senator GLENN. Let me get into a little different area. While we have been chiding the Europeans for their cozy relationship with the Soviet Union, we have been quietly helping the Soviets to obtain foreign exchange through exports of enriched uranium to the West and Western Europe.

For example, $43.8 million worth of uranium entered the United States from the Soviet Union in 1980. In one transaction, a German electric utility bought uranium in Canada, sent it to the Soviets for enrichment, and it then came to the United States for fuel fabrication. It was then reexported to Germany.

In another transaction last year, Soviet uranium intended for Austria was imported to West Germany. It then went to Rochester Gas and Electric in upstate New York.

Some of these deals can be traced back to the time in 1974 when, in a misguided effort to put the uranium enrichment industry in private hands, the Nixon administration closed off the order books for new supplies of enriched uranium and forced the Europeans to go to the Soviets for new enrichment orders. As a result, the Soviets now have 50 percent of the nuclear enrichment business in Western Europe. I think that in the past, we have succeeded in making Europe very unsure of what our energy and foreign policies really are.

There is the need for more emphasis on energy R. & D., for alternative sources of energy. We need to support R. & D. that is critical, and which private industry will not take up because of the risk. Yet, the administration is talking about doing away with the Department of Energy. Apparently, it will propose to split all of DOE's functions up all over the lot, and somehow hope they will all get done somewhere and that it will save us money.

Mr. Davis, I don't know what your views are on DOE going out of business. Are you in favor of working yourself out of a job over there?

Mr. DAVIS. I think there are a lot of important things that the Department is doing that will have to be continued to be done.

Senator GLENN. I couldn't agree with you more.

Mr. DAVIS. What we are seeking to do is find some way to restructure those activities. I guess that is probably about all I have to say at this point. [Laughter.]

Senator PERCY. We will certainly have in the full committee, I am confident, even though I cannot speak for the chairman, thorough hearings on reorganization. As ranking Republican of the committee, I sat through months and months of organizational and reorganizational work on both the Department of Education and the Department of Energy.

Senator GLENN. I don't think I have any more questions, I guess I have talked more than I have listened this morning. But these things are a burden on my mind. I have worked in these areas for so long, and it really disturbs me when we are sending so many uncertain signals on these matters.

I, for one, don't blame the Germans for being confused. I think we are forcing them into the pipeline for all the reasons I said. If we were going ahead, developing new energy technologies and sharing them with the Germans, then they would have an alternative to Soviet natural gas. But we are reducing our energy technology development. We are also reducing our military presence in the Persian Gulf area. We seem to be giving them no other choice.

I also have a list of questions here that Senator Jackson has asked me to submit. Could they please be answered for the record, Mr. Chairman?

Senator **Percy**. They will be submitted for the record.

I had hoped Senator Jackson could be here because he does have some very strongly felt views in this area.

Senator Glenn, as always, some of the things you said expressed all of our concerns. I would like to just categorically say that I have always supported the policy, that so long as the Soviet Union has an adversarial position with us in so many places in the world—we certainly feel very strongly about what they have done in Afghanistan and other parts of the world—that I would certainly support the administration's position to prevent the sale to the Soviet Union of unique equipment from the United States that would be of military or strategic value to them. That is not anything other than realistic. We are in an adversarial position that way. We both know it. We have laid it right on the table. Whether it is a unique computer, whether it is unique equipment that can have military application, there is no reason for us to supply that equipment to them.

However, we do have here a novel pipelayer which is basically a bulldozer with a crane hung right on the side. Here is a standard bulldozer. The bulldozer is probably the world's most common piece of construction equipment, not of any particular strategic or military value. There is the bulldozer, available from many countries, all over the world, nothing unique about them at all, and here is the pipelayer, with a crane on the side of it. Is there any—I ask the question of all three of you—is there any specifically military use for the pipelayers that we might sell to the Soviet Union for the construction of the Siberia-to-Europe pipeline? For instance, has our own Department of Defense, with all that budget they have got, have they ever bought one pipelayer for our military usage?

Mr. **Hormats**. I am not aware of whether they have or not. We can check that out.

Senator **Percy**. I will tell you—they never have. I know that. They never have purchased a single one of them. I couldn't put a Komatsu pipelayer here but I am very much interested in the competitive situation because this is exactly what I faced all through industrial life. I saw competitors build up a huge trade with Eastern European countries, strengthening their economies. Here we have Komatsu [gesturing]. That is the Komatsu pipelayer. Just compare it with this pipelayer. We have a Caterpillar pipelayer—just compare the two. Ordinarily, a manufacturer is very anxious to say "we have very unique things, we have an edge in quality." In this particular case, I think an objective buyer would just simply have to say the Japanese have done an extraordinarily good job in matching the quality, the characteristics, and the performance of Caterpillar. The Soviets have bought a number of Komatsu pipelayers, as has been stated.

I don't see any military value. We do know that Komatsu is ready, willing, able, and anxious to get this business. Then the question is, if it is $1 billion of business, $500 million worth of business, $200 million, whose economy is strengthened—ours or the Japanese? Are we somehow hurting the Soviet economy by depriving them of an American-made product? No. We are undercutting the American economy. We are weakening our economy if we sit here like fools, in a sense, and say, "No, we are not going to sell you ours," knowing full well that they can buy a comparable one.

Mr. Olmer, press reports indicate the pipeline deal could provide about $10 billion worth of business to Western European, American, and Japanese manufacturers of pipe, compressors, and construction equipment. If the pipeline does go forward, how much of this business do you estimate the United States could potentially receive? How many jobs would this mean for U.S. workers, not talking now about a particular industry. I have just come from the Quad Cities, Moline. As you know well, the headlines in the paper reported 2,500 more workers laid off. This industry is in a recession—high interest costs, and sagging prices for our fine product. Many of them are farm implement makers. They have heavy unemployment. What is the potential for us out of this $10 billion of business that Western European, American, or Japanese manufacturers can obtain?

Mr. **Olmer.** Senator, a couple of points. As I think you are aware, we estimate that for every billion dollars of exports, there are roughly 20,000 American jobs involved. That is a rough estimate. With respect to the degree to which the United States would be competitive, I think you are too modest about your Illinois company, Caterpillar. They produce a better pipelayer than Komatsu, which is why the Soviets want it. That is not to say that Komatsu isn't coming on very strong. As you know, they have targeted Caterpillar. By the end of this decade, they want to exceed Caterpillar in terms of market share in the world. The answer to your specific question about the degree to which we will participate in whatever amount of dollars are expended by the Soviet for the pipeline is premature. We do not yet have our policy set and we have not yet discussed with the allies, the degree to which alternate energy sources would be available. My hope and belief is that when our policy is set and discussions take place, U.S. companies will have an equal opportunity to compete, across the board, in the nonstrategic elements of the pipeline construction and fabrication.

As you also know, I am sure, a relatively small portion of the pipeline-related equipment is controlled for national security reasons. The preponderance is controlled for foreign policy reasons. In pipelayers and related goods and services, we have every reason to believe we are fully competitive across the board.

Senator **Percy.** If 10,000 jobs is accurate, as I am sure it is, then the question is, if unemployment in the United States is 10,000 higher, who pays for it: Unemployment compensation—it comes from every worker in America; welfare payments—they come from every single taxpayer in America. Our economy is weakened and the question is, Is there anything unique, sufficiently unique, that if we don't sell it, they will not go ahead with the pipeline? They are going to go ahead with the pipeline. These pictures show the pipelayers. You can look closely. They are identical in a sense down to the grillwork. The Soviets have already purchased hundreds of the Komatsu tractors. The question of selling pipelayers to the Soviets does not seem to be whether, but rather who does the selling. As long as there is not a strategic or unique military advantage or special quality offered by the American producer, then I would like to see us have an equal chance. In the Export Administration Act, the Congress has stated that before impeding U.S. sales of equipment, we should carefully consider what is available from foreign competitors, as you have aptly pointed out.

Therefore, if we are going to fight the Siberian pipeline by denying licenses for U.S. equipment, we have to be sure our allies, like the Japanese, will apply similar controls. Otherwise, we simply punish our own industry to set an example which achieves no real practical results.

What do we think the response might be from the Japanese? Should we restrict American pipelayers from bidding? Do you think the Japanese would similarly restrict Komatsu from selling? What is our outlook on that?

My own judgment is that they do not listen to us. They probably will not exercise restraint.

Mr. HORMATS. It is hard to predict the precise reaction. But I think as Mr. Olmer has pointed out, this is not on the CoCom list. As a matter of historical record, it has been very difficult for us, for any sustained period of time, to get other countries to along with restrictions on items which do not have a direct security implication and are not on the CoCom list. As a general track record, we haven't succeeded for sustained periods of time in holding back other countries' exports.

Senator PERCY. In answer to Senator Glenn's question on the embargo, on which I originally stood with the President of the United States when he made that decision, I don't want to try to pull the rug out from under him, because I supported the boycott on the Olympics and transfer of technology to make the Soviet Union realize they are going to pay a very, very stiff price. But over a period of time, again as you said, Secretary Hormats, it is totally unrealistic to think you can sustain an embargo.

Argentina signed a 5-year contract for grain sales to the Soviet Union; the Canadians went ahead; grain was available. It was either going to be our grain or theirs. Just look at our situation on the farm today. For farmers, the cost of producing corn today is $3.60 and the elevator price yesterday was $2.48. Soybeans cost $7.50 with a $6.18 selling price. That is why our farm situation today is very tough. Who ends up making the loans; the U.S. Government, the taxpayer. We weaken our economy. With interest costs as high as they are, they can't buy farm equipment, not at these prices, not with that kind of income.

So there you have a whole depressed industry and here it is the very same industry tied up here. The Soviet Union today, with probably 170 million tons of grain against 190 million 1 year ago—they are down 20, they are down 30 percent over their goals—they are going to import 40 million tons. The question is, From whom are they going to import it? From us? We think we will probably sell them half of that, 18 million, something like that. That again takes a load off the taxpayers because it is going to end up in our bins.

Again, are we realistic? Are we hardheaded Yankee traders or are we really totally unrealistic, getting caught up in methodology and rhetoric without being practical and hardheaded?

Certainly the Japanese, the Germans, the United Kingdom, they are practical and hardheaded and realistic about this. I think your policy enunciates more clearly than I have ever heard enunciated the practical facts of life that we have really got to live with.

My last question is simply a followup on this. It is vitally important to all American export industries that we be perceived throughout the world as a reliable supplier of goods and supplies, agricultural products, whatever it is. We are in the business of exporting. We pay for our imported oil with our exports, we have got to have exports to hold our jobs, to hold our position in the world markets, to keep our economy going. To be a reliable supplier, we need a clear and a consistent policy on what we will and will not export. Caterpillar Tractor, after a prolonged delay, recently received a license to export pipelayers to the Soviet Union. I have supported that decision. The President of the United States supported it. I think he was absolutely right to come to that decision. It was a hardheaded decision to make. We made it. It was very clear.

Mr. Olmer, is this an indication that future license applications would be granted as well for the exact same type of equipment?

Mr. OLMER. I think it is an indication of the degree to which we take seriously the need to be consistent and predictable, but I would not want to leave you with the impression that that is a precedent for how we would deal with existing or anticipated future applications for the development of the Soviet Union. We are in the process of trying to evaluate that hardheaded, thoroughly-reviewed administration policy in that regard and have not yet reached a decision.

Senator PERCY. Thank you.

Senator Bradley wanted to be at these hearings. He was cordially invited because he is such a factor in the field of energy, but he could not attend. I will submit to you his questions for the record.

[The prepared statements of Messrs. Davis, Olmer, and Hormats, and responses to written questions follow:]

PREPARED STATEMENT OF W. KENNETH DAVIS

INTRODUCTION

Mr. Chairman, Members of the Committee, I am pleased to appear before you today to discuss the energy implications of the proposed Soviet Siberian natural gas pipeline and to review a number of world market developments which could help displace the anticipated deliveries from the pipeline. Before turning to a discussion of the pipeline project, I would like to briefly review the current and prospective West European energy situation as well as the state of Soviet-West European hydrocarbon trade in order to set forth a context for my remarks.

In recent years, Western Europe's demand for imported oil has fallen. In spite of substantial economic growth between 1973 and 1980, total energy requirements in Western Europe grew very little and oil consumption fell by almost 2 million barrels of oil per day. Rising oil prices have caused both the United States and its European partners to substitute alternative fuels for petroleum. During the 1973–80 period, oil as a percentage of overall energy use declined from 63 percent to 53 percent and Europe's dependence on oil imports to meet energy demand declined from 61 percent to 43 percent. Furthermore, Western Europe's overall energy requirements are expected to grow by only about 1 percent per annum during the 1980s or less than half the rate of expected growth in GNP. Oil demand is expected to continue its decline.

Europe has thus achieved considerable success in switching to alternative fuels and by reducing oil demand in response to rising oil prices. In so doing, they have emphasized natural gas as a major alternative to oil in meeting future energy needs. However, while we fully support their policy to reduce vulnerability to oil supply disruptions, there is a possibility that they have underestimated both the security and economic risks of gas imports and the potential for alternative sources and greater efficiency.

Western Europe is presently dependent upon the U.S.S.R. for about 1 MB/D in oil deliveries. Four countries, Germany, France, Italy and Austria import about 2.2 billion cubic feet per day (bcf/d) of Soviet gas, the energy equivalent of about 400,000 barrels per day (MB/D) of oil. These energy exports are the U.S.S.R.'s principal source of hard currency, accounting for about half of total receipts.

The composition of Soviet/West European energy trade will shift during the 1980s from oil to gas. Given the apparent near-term peaking of oil production in the U.S.S.R. and the need to continue supplying Eastern European partners, oil exports to the West can be expected to decline and may even be eliminated by the mid-to-late 1980s. The U.S.S.R. will seek to replace these oil exports with gas sales, for without energy generated hard currency earnings, it would be virtually impossible for the Soviet Union to maintain current levels of purchases from the West.

Negotiations are currently underway for the construction of a 5,000–6,000 km pipeline that would link the major gas fields near the Yamal Peninsula to Western Europe. Six Western European countries could be involved in purchasing gas from the project: West Germany, France, Italy, Austria, the Netherlands and Belgium. Although Japan would not receive any gas from the pipeline, the Japanese could play a major role in its completion by selling equipment for use on the project.

This pipeline could be completed by 1978–88 if there are no unanticipated technical difficulties or major East-West political controversies. It was originally anticipated that the pipeline would deliver at least 4 billion cubic feet/day (bcf/d) in additional gas supplies to West European markets. However, it is now expected that the pipeline would operate at lower compression levels and deliver about 3.0 bcf/d (equivalent to over 500,000 barrels of oil per day). It is possible that a second parallel strand of the pipeline with the same capacity would be constructed a few years after the first strand.

West Germany and France would be the largest importers of the pipeline's gas. Assuming completion of only one of the pipelines, these countries would each import 0.8 bcf/d with Austria, Belgium, Italy and the Netherlands sharing the remaining 1.4 bcf/d. Under this scenario, German and French import dependence on Soviet gas could reach 25–30 percent of total gas needs by 1990, while Italian and Belgian market dependence may exceed 20 percent. Dutch dependence would be about 10 percent, while Soviet gas would continue to account for over 50 percent of the Austrian gas supply.

Given their present plans, these six nations will likely require additional natural gas imports from non-Western European sources during the coming years. West European, non-North Sea gas production is likely to peak during the early part of this decade, and then begin to decline. The Dutch are phasing-out gas exports in order to conserve resources for future internal use. Further, based on current assessments, onshore gas production prospects in Continental Europe are very limited. However, there are promising offshore prospects in the North Sea for post-1990.

Total Western European gas production by 1990 will meet only about 60 percent of total demand as compared to about 85 percent this year. Two important trends should also be noted: (1) gas is projected to increase as a percentage of total energy use from the present level of 14 percent to approximately 17 percent in 1990, and (2) gas use will rise in the residential and commercial sectors and will decline in the electric utility sector. The role of gas in the interruptible industrial sector will depend upon its market competitiveness with alternative fuels, particularly residual oil.

From an energy security perspective, these trends pose problems. Although dependence on foreign oil may be undesirable, dependence on imported gas can be even less so. Oil can be obtained from many sources and can be easily transported. Gas is available from far fewer sources and since it can only be transported by pipelines or LNG tankers, there is much less flexibility in coping with supply interruptions. High levels of gas consumption in the residential sector also pose energy security problems because rapid switching to alternative fuels in an emergency is difficult.

Although our European allies and friends are aware of these problems, many nevertheless consider the Soviet gas deal to be in their best interest. They are anxious to diversify their energy imports away from the Persian Gulf and may not consider the U.S.S.R. to be less reliable than certain OPEC producers. They would also welcome the opportunity to bid for multi-billion dollar equipment purchases that the U.S.S.R. will need to complete the project.

In spite of these perceived advantages, we believe that the project has significant energy, economic, and security drawbacks:

Increased dependence upon the U.S.S.R. is a potentially unreliable form of diversification which will not necessarily increase supply reliability and could make European nations more susceptible to political leverage. OPEC producers also have energy as a potential tool to influence European policies. However, they lack a comparable ability to combine energy leverage with threats to pursue other forms of pressure or aggression.

It can be expected that the U.S.S.R. may remain a reliable supplier in order to obtain European participation in the pipeline project. However, completion of the pipeline is assured and European vulnerability is increased, Soviet reliability may be more questionable.

The U.S.S.R. will also be in a position to increase the price of its gas when the pipeline is completed. The Europeans' bargaining power will be weakened because of the dependence of residential consumers on Soviet gas and the dependence of European banks on loan repayments. Higher prices would, however, result in some loss of market share.

Increased purchases of Soviet gas involve a significant extra cost. An expensive storage system has to be constructed because Soviet deliveries are greater in the summer, a period of low demand, than in winter.

Although many West Europeans believe that increased imports of Soviet gas will be needed to meet demand in the late 80s and 90s, these concerns may be overstated. There is a strong likelihood that alternative energy supplies will be available on the world market at competitive prices during the relevant time-frame.

OIL

A major alternative may be oil itself. Our perception of the oil market for the 1980s has undergone a significant change from that of the late 1970s when West European plans for gas imports were developed. Few, if any, analysts predicted the magnitude of demand reduction in response to rising oil prices. Much of this is due to structural changes in our economies and societies, not simply to reduced economic growth. Where most analysts predicted sharply rising oil prices in the 1980s, now there is a real possibility that supply may be more plentiful and prices more stable.

The United States has taken and will take a number of steps which will increase the availability of oil as well as gas on the world market. We have already decontrolled oil prices in an effort to encourage domestic production and reduce wasteful use. We are also moving to increase leasing on Federal lands and on the Outer Continental Shelf in order to help stimulate heretofore locked-in domestic energy wealth. And we are facilitating the expanded production and use of coal and are getting our nuclear program back on track.

Under the current law, price controls on most domestic gas will be removed by the time that the Yamal pipeline is completed. Price controls on domestically produced gas have discouraged production and have encouraged imports, allowing foreign producers to charge more than our own companies have been allowed to receive. Gas price deregulation will help stimulate domestic production, increase efficiency, and enable the United States to decrease its need for both oil and gas imports.

To the extent that the United States will still require imported gas, market forces will favor imports from Canada and Mexico and possibly other Western Hemisphere sources rather than long-haul liquified natural gas (LNG). Even under our current competitive fuels test for the price of gas imports, long-haul LNG will have difficulty finding a place in the U.S. market.

African and Middle Eastern gas is more proximate to our European partners than it is to us and can be an incremental alternative to Soviet imports. There are substantial gas resources in Algeria, Nigeria, Cameroon and Qatar which could be made available to Europe; gas from some of these sources could replace part of the anticipated Siberian pipeline deliveries during the relevant time frame.

Within Western Europe, Norway has the potential to become an increasingly important gas supplier to Continental Europe in the 1990's, although prospects for accelerated development in the 1980's are uncertain.

Norway's recent decision to go ahead with development of Statfjord and other gas fields will help offset premature production declines from the Ekofisk gas field and will increase current exports from 0.9 to 1.1 trillion cubic feet (tcf) by 1985–1986. However, the development of the giant Bloc 3½ field (1–2 tcf/year) involves further delineation of adjacent unleased blocs, production of liquids before the gas is developed, and a lead time of some 10 years.

On balance, Norway's bloc 3½ as well as other undeveloped North Sea fields offer Western Europe the post-1995 potential to offset the phasing out of 1.8 tcf/year of Dutch gas, and thereby contribute to reducing dependence on Soviet gas. Translating North Sea resource potential into market reality, however, requires: (1) timely development of structures such as Bloc 3½, and (2) Norwegian and British Government policies to support and expand gas development.

COAL

Coal has more potential than any other resource for providing additional energy during the rest of this century and beyond. Nearly everyone who has studied our own situation and that of the other major industrialized countries in recent years has concluded that rapid growth in the use of coal is critical to the successful transition to a more secure energy future. There are increasing indications that a "coal renaissance" is now underway and that the shift to increased coal use will gain momentum if we are wise enough to let market forces work their way.

The boom in U.S. exports, for example, that was forecasted by the World Coal Study to begin in earnest in 1985, is already upon us. This study projected that, by 1985, the United States would be exporting 20–30 million tons of steam coal. We reached that level last year by exporting 27 million tons of steam coal; an overall 90 percent increase over the 1979 export level and a 700 percent increase in exports to Europe alone.

I think it is important to note that, in the short-term, our coal industry and related companies have done an outstanding job to meet this phenomenal demand growth. Over the longer-run, they will be prepared to do much more based on plans already announced.

Between now and 1990, some projections indicate that international trade in steam coal could increase from 80 to 280 million tons per year, a 12–13 percent annual growth rate. U.S. steam coal exports are projected to be about 75 million tons in 1990 and 180 million tons by 2000. With its large reserve base and stable investment climate, U.S. industry is well positioned to capitalize upon future growth in worldwide coal demand.

This Administration plans to continue reassuring our trading partners that the United States is a reliable supplier of coal and that we will endeavor, as witnessed by the creation of the Coal Interagency Working group chaired by the Department of Commerce, to remove regulatory impediments to coal trade.

For their part, the European Governments must lower barriers to coal imports and facilitate coal's achieving the full market share that its relatively low price warrants.

NUCLEAR

The Administration has announced its commitment to the development of nuclear power in the United States and has stressed that the United States will reestablish itself as a reliable partner in the international nuclear energy arena. Many of our allies and friends in Europe will welcome the reentery of the United States into a position of leadership in the International nuclear community. We believe that reestablishment of the United States as a reliable nuclear partner could help to mitigate some of the problems associated with the accelerated development of West European nuclear power generation.

CONCLUSION

We are sensitive to Europe's need for reliable, additional energy supplies. We are concerned, however, that increased reliance on Soviet gas carries with it significant political and possibly economic risks. If alternative sources—such as gas from other nations, coal imports, nuclear and even oil—are given more attention and the full potential of energy efficiency is recognized, we believe that the perceived need for Soviet gas could be lessened. The policies of the Reagan Administration will encourage energy production and efficiency in the United States, which will then have a salutory effect upon the world energy markets of the 1980's and beyond. We also are confident that the United States will be a growing, reliable supplier of a major alternative to oil and natural gas—steam coal, and will be a more positive force in the expansion of nuclear power. We will be discussing these issue with our European partners in the next few weeks.

RESPONSES OF MR. DAVIS TO WRITTEN QUESTIONS SUBMITTED BY SENATOR JACKSON

Question 1. Will the use of any U.S. technology be involved in the West Siberian Pipeline project? If so, what is it and why should the export of this technology be approved? What would be the effect on the commercial viability of the project if this technology or other western technology were unavailable?

Would the embargo of any U.S. or other western technology impede implementation of the West Siberian Pipeline project or impair its commercial viability? What consideration has the administration given to this matter? For example, what are the positions of the Department of Energy and the Department of Defense? In light of the enormous potential advantages of the project to the Soviet Union and the potential disadvantages to the West, including increased Soviet leverage over the West, the acquisition of hard currency and western technology, and economic benefits which mitigate the dilemma confronting the Soviet Union in choosing between military and civilian investment, has the possibility of a United States or a coordinated Western embargo of technology for the West Siberian project been seriously studied?

Answer. The administration has under high level review issues related to licensing policy for the export to the USSR of oil and gas equipment and technology.

No U.S. equipment or technology has been approved for export to the U.S.S.R. for which the stated end-use was related to the Western Siberian Pipeline project. It is possible, however, that some U.S. technology might be sought for use in the project. There has already been one British application to the Coordinating Committee on Export Control (COCOM) for a U.S. computer for use on the Czech portion of the pipeline. This was denied on security grounds not related to the pipeline. There are pending French computer sales for the pipeline. and comparable computers are also available from Germany, the United Kingdom, and Japan. Accordingly, there would not be a Soviet dependence on U.S. computers. The largest potential involvement of U.S. technology is related to gas turbine engines for compressors. There is, however, foreign availability in the United Kingdom.

The United States has a limited unilateral ability to hinder the pipeline by denying key components for its construction. Equipment to be used in the construction of the pipeline is currently produced, or can be produced, by foreign equipment suppliers not subject to U.S. technology controls. A U.S. embargo on equipment for the pipeline could serve to delay the pipeline's completion, but we understand that such a delay would not extend beyond the delays to be expected in any case. A unilateral U.S. embargo of equipment for the pipeline could spawn or speed up the creation of alternate suppliers of equipment in which the United States is currently the world leader.

A multilateral equipment embargo towards the pipeline could be more effective in impeding the project. In this context, the cooperation of foreign equipment suppliers such as the United Kingdom, Japan, France, Germany, and Italy would be crucial. However, it is highly questionable whether these countries would participate in a multilateral embargo. France, Germany and Italy will buy the bulk of the pipeline's gas, and have already received large contracts to supply equipment for the project. They recently told us they intend to proceed with the pipeline. It is unlikely that they would be willing to embargo equipment sales for the pipeline. Foreign suppliers who are not pipeline participants, such as the United Kingdom, would be concerned about the risk of an open conflict with their European partners. Japan's participation in an embargo would likely depend on what Europe does.

Question 2. What are the estimated Soviet hard currency earnings from the West Siberian Pipeline project? What are the anticipated sources and amounts of financing for this project? What are the estimated Soviet hard currency earnings in the absence of the project?

Answer. When the pipeline is fully operational—which may not be until the late 1980s—it should be capable of exporting about 40 billion cubic meters of natural gas per year to Western Europe. Exactly how much hard currency the Soviets will earn will depend upon the base gas price and price escalator. If the Soviets market this gas price competitive with current European residual fuel oil prices ($4.50–$5 per million Btu), there is the potential for annual export earnings from this project of roughly $7 billion in 1981 dollars.

By way of comparison, Soviet hard currency earnings from merchandise exports totaled $23.8 billion in 1980, excluding sales of gold and military-related equipment, which fluctuate somewhat but usually add several billion dollars to total hard currency earnings in any given year. It is difficult to project the value of total Soviet hard currency earnings at the time this project comes on stream. Much depends on what happens to Soviet oil exports (currently accounting for about half of hard currency exports) and arms sales, and developments in the world gold market.

We expect that the necessary credits to finance the purchase of Western equipment and large-diameter pipe will materialize in the countries supplying the goods—primarily but not exclusively West Germany, France, and Italy. These will include some government and/or government-backed credits. A consortium of West German banks already has agreed in principal on long-term credits to cover West German equipment sales. Pipe financing is to be arranged at the time of the sale. Though it is not clear what the final price tag will be for the Western equipment and pipe, it could range from $10–$15 billion. Press reports indicate that financing to cover these levels has already been arranged.

Question 3. Soviet defense spending has been increasing in real terms for more than 20 years and, in recent years, sluggish Soviet economic growth has caused military expenditures to take an increasing share of the Soviet GNP. Would termination of the West Siberian Pipeline project with the loss of hard currency earnings and western imports cause increased Soviet economic problems and make it more difficult for them to maintain the current pace of their military spending?

Answer. We understand that the Department of State has answered this question.

Question 4. What alternative energy resources including North Sea gas could fulfill the Western European energy needs which the West Siberian Pipeline project is intended to fulfill? Are these alternatives cost-effective and commercially viable? What are the potential economic benefits to the United States or other Western nations of developing these alternatives instead of the West Siberian Pipeline project?

Answer. We have discussed with Western European nations alternatives in a number of areas:

Gas.—African liquified natural gas (LNG) from Algeria and Nigeria is a possible alternative to Soviet gas. The long-term European market for African LNG will be determined by the price and security of the supplies, as well as demand from other regional gas markets. Gas price deregulation in the United States may contribute to European energy supplies. Deregulation will help stimulate domestic production, and increase efficiency. To the extent that the United States will still require imported gas, market forces will favor imports from Canada and Mexico, and possibly other Western Hemisphere sources, rather than long-haul LNG.

Nigeria plans to build a major export facility for LNG, half of whose output is earmarked for the U.S. Changes in gas market conditions have already rendered it unlikely that the project will go forward as originally planned. The West Europeans, who plan to take half the gas, hold an option on the share assigned to the U.S. companies. Similarly, more LNG for European importation may become available from Algeria. It is possible that sufficient gas resources could become available in Algeria and Nigeria to replace most of the prospective Siberian pipeline deliveries. However, Algeria's price demands have to date been unacceptable to the Europeans and Nigeria's plans to develop its gas reserves for export have been delayed by administrative, financial, and price problems.

Gas resources may soon be developed for export in Cameroon and Qatar as well, thus providing even more supplies for the world market.

Within Europe, additional gas is available in the North Sea, but additional development there requires long lead times and may not be economical at the present time.

Coal.—Coal is found in abundance in Western nations, and can be a competitive alternative to Soviet gas in many applications.

The United States is committed to providing access to our domestic coal markets. The domestic industry is moving rapidly to increase exports with a 75-percent increase in coal loading capacity currently under construction. The administration has proposed legislation to finance and expedite port dredging which may be needed for the 1990s. Regulatory barriers to coal infrastructure development are being examined, and many will be reduced consistent with other national objectives. We are working in the International Energy Agency to improve coal market information.

Nuclear.—The Administration has announced its commitment to the development of nuclear power in the United States and has stressed that the United States will reestablish itself as a reliable partner in the international nuclear energy arena. Our more positive position on reprocessing and expanded nuclear cooperation, particularly in the back end of the fuel cycle, could help to mitigate some of the problems associated with the accelerated development of West European nuclear power.

Oil.—Oil itself may be an important alternative to Soviet gas. Structural changes in oil consumption patterns could keep oil demand well below production capacity. The United States is making a strong contribution to this trend. U.S. oil imports this year are running at about 5.4 million barrels per day, 3½ million barrels below their 1977 peak. (Note: This figure includes imports for the Strategic Petroleum Reserve but not the territories.) Unless there are some negative surprises, we foresee oil markets being in relative balance throughout this decade.

One argument for the proposed Siberian pipeline has been that it would generate employment for depressed European regions and industries. We have pointed out to the Europeans that the low interest rate of the export financing they are reported to be offering the Soviets on equipment for this project appears to imply a large subsidy and that a similar effect on overall employment would result if they spent the sums on other major industrial enterprises. This could include construction of facilities necessary to use the alternative sources mentioned above.

Question 5. If the West Siberian Pipeline project is built, what percentage of Western Europe's gas supplies will come from the Soviet Union? Please provide estimates for Western Europe as a whole and by individual country.

Answer. The projections are provided in the following table.

WESTERN EUROPE—DEPENDENCE ON SOVIET GAS AS A PERCENTAGE OF TOTAL GAS CONSUMPTION AND OF TOTAL ENERGY CONSUMPTION

			1990[1] (after completion of 4 bcf/d pipeline)	
	Gas	Energy	Gas	Energy
West Germany	14	2	29	6
France[2]	0	0	23–28	4
Italy	29	5	29	5
Netherlands	0	0	10	4
Belgium	0	0	32	8
Austria	59	12	82	18

[1] Based on individual government estimates of gas and total energy consumption.

[2] Contracted volumes of Soviet gas were delivered to Italy in exchange for Dutch gas until February 1980.

Note: CIA data provided to us by State.

On an overall basis, imports of Soviet coal, oil and gas made up 7.7 percent of the above countries' total energy consumption in 1979. Soviet gas constituted about 3.2 percent of total energy. In 1990, if the pipeline is operating, Soviet gas is expected to comprise about 6 percent of Western Europe's energy consumption, but with the expected sharp reduction or elimination of Soviet oil exports to Western Europe, total Soviet energy supplies will still make up roughly 8 percent of these countries' consumption.

While Western Europe's dependence on Soviet energy imports is expected to remain unchanged in aggregate terms, dependence on imported natural gas poses energy security and vulnerability concerns. High levels of gas consumption in specific regional markets as well as end-use consumption sectors (e.g., residential) pose security problems because rapid switching to alternative fuels in an emergency is difficult. Moreover, natural gas is available from far fewer sources than oil and since it can only be transported by pipelines and LNG tankers, there is much less flexibility in coping with supply interruptions.

Question 6. In 1980 the Soviets threatened Western Europe and Japan with a cut-off of petroleum supplies in an effort to undermine support for U.S. sanctions against the Soviet Union following the invasion of Afghanistan. What assurance do we have that Soviet control over Western Europe's gas supplies will not be used as a political blackmail weapon to adversely influence the foreign and defense policies of our NATO allies?

Answer. Our concern is precisely that the Soviets would attempt to exploit Europe's dependence on Soviet gas to gain political or economic benefits. Veiled threats of supply cut-offs might be effective in provoking regions and sectors of European economies dependent on Soviet gas to urge their governments to avoid actions which they fear might lead to a supply cut-off. In 1980, for example, the Soviets never overtly threatened a petroleum cut-off to Western Europe and Japan, but they did mount a public affairs campaign emphasizing the fact that the U.S.S.R. was a significant supplier of energy to some Western countries.

Question 7. Is one purpose of the West Siberian Pipeline project to reduce European reliance on Middle East oil supplies? What assurance do we have that Soviet control over Western Europe's gas supplies will not be used as a "gas weapon" on the pattern of the Arab "oil weapon" thereby increasing rather than reducing Western energy security vulnerability?

Answer. Europeans argue that one purpose of the pipeline is to reduce European reliance on Mideast oil supplies. They observe that they are far too highly dependent on a few unstable nations for oil. (Middle Eastern oil constitutes 55 percent of European oil supplies, and oil in turn provides over half of European energy. The United States, by contrast, imports from the Middle East only one eighth of its oil, and oil is only 43 percent of U.S. energy supplies.) In the recent past events in the Middle East have shown that energy supply crises can be provoked both by use of oil as a "weapon" and by political upheavals which have as a consequence reduction of available oil supplies.

There is, however, no assurance that Soviet gas will not also be used as a "weapon," or—perhaps more likely—as a lever with which to gain political benefits, just as certain Middle Eastern countries have done. A State Department lead U.S. delegation has made this point of view clear to the Europeans. The Europeans argue that they have in place or will develop, a "safety net" of gas reserves or alternative energy sources to mitigate their vulnerability to a Soviet gas cutoff.

RESPONSES OF MR. DAVIS TO WRITTEN QUESTIONS SUBMITTED BY SENATOR BRADLEY

Question 1. Has the administration (a) evaluated and (b) discussed with the potential European importers of Soviet gas, the following measures to limit the security risks associated with their dependence on the U.S.S.R.:

(1) Imposing a fee on imports of Soviet gas to finance greater gas and oil stocks and to discourage imprudent conversions to gas.

(2) Making Alaskan gas available for export and assuring our European allies that the administration will facilitate legal and regulatory changes needed to permit privately-financed projects to ship Alaskan LNG directly to Europe? In this connection, please provide the administration's information, assumptions and assessments of the following:

> Will European utilities, industries and consumers be willing to pay more for imported gas than their American counterparts?
>
> Will the estimated costs of transporting Alaskan gas by pipeline to the American market match or exceed the estimated costs of shipping it by submarine LNG tankers to Europe?
>
> How does the administration weigh the international security effects of forcing American gas consumers to underwrite some of the financial risks of the pipeline project, as the administration has proposed, by approving pre-commencement billing for portions of the Alaskan pipeline? By preempting Alaskan gas for the American market, will this pipeline not drive our allies to seek still greater gas supplies from the U.S.S.R.?

Answer. (1) A State Department lead delegation made clear to our European allies our concerns over the security risks associated with energy imports from the U.S.S.R., and the vulnerability that could arise from over-dependence on

Soviet gas. The United States is discussing with our allies various measures that would reduce their vulnerability to a supply cutoff or political/economic pressure based on the threat of such a cutoff. Such measures cost money; a "security premium" to account for the external costs associated with the increased risk involved in Soviet energy imports would be one possible way to fiannce a "safety net" of the various precautions to reduce their vulnerability. But the exact method by which a safety net is financed is of course, a question for the Europeans themselves to decide, since it is they who are exposed to the increased risk and must pay the increased cost associated with it.

(2) The previous administration through its decision to support the Alaskan Natural Gas Transportation System (ANGTS) committed the United States to a method of transporting Alaskan gas. This decision received the full support of Congress, has been ratified in a treaty with Canada, and a portion of the pipeline has already been completed and is in use. The present Administration has affirmed this support for a privately-financed ANGTS and submitted a waiver package to the Congress to remove regulatory and legislative obstacles to facilitate its completion.

We believe that ANGTS is fully consistent with U.S. national security interests. Upon completion, it is expected to provide the United States with an energy source equivalent to 400,000 barrels per day of imported oil. At the same time, it can reduce U.S. need for imported natural gas, which will free up existing supplies for Europe as a supplement or replacement for Soviet gas.

We have not evaluated shipping Alaskan natural gas to Europe nor presented specific propositions to the Europeans for using Alaskan gas as an alternative to Soviet supplies. All of the natural gas alternatives we presented to the Europeans involved either existing facilities or planned projects outside North America. In all of the alternatives we presented, natural gas producers and consumers agree that the facilities would prove economically viable. We are unable to judge whether European natural gas consumers are willing to pay higher prices than their U.S. counterparts. U.S. gas prices are lower than those in Europe, but the U.S. market has been regulated for some period of time. Ultimately, this question would have to be resolved in negotiations by the private sector. European companies would make this decision based upon the price and availability of alternate petroleum fuels.

While ANGTS is specifically designed to transport the 26 trillion cubic feet of proven reserves in the Prudhoe Bay area, and thus preclude that gas's use for other projects, new discoveries may make available additional gas supplies for other projects such as the LNG proposal to which you refer. Alaska has estimated potential reserves of over 100 trillion cubic feet and the existence of a proven method to transport Alaskan gas when ANGTS is completed should encourage further gas exploration.

Under the terms of the Alaska Natural Gas Transportation Act of 1976, exports of Alaskan natural gas are subject to the requirements of the Natural Gas Act and Section 103 of the Energy Policy and Conservation Act. In addition, before any Alaskan natural gas in excess of 1,000 MCF per day may be exported to any nation other than Canada or Mexico, the President must make and publish an express finding that such exports will not diminish the total quantity or quality nor increase the total price of energy available to the United States. Clearly, the Administration and regulatory agencies would have to have a specific proposal from the private sector before an evaluation of these criteria could be undertaken.

In addition, without having some agreed private sector proposal for an Alaskan LNG project in hand, it is difficult to foresee what other regulatory and legal barriers would have to be removed to enable a project to receive private financing. As such it is not appropriate for the administration to make a commitment to remove any such barriers in advance. As for the comparison of costs between ANGTS and LNG, we believe that the relative merits of alternative means of carrying out commercial activities are best left to the private sector to evaluate.

Question 2. Has the administration demonstrated to the Europeans that we are willing to improve their options by:

(1) Making it clear to them that we are no longer in the business of subsidizing the importation of natural gas. In particular, have we told them that we do not foresee the importation of additional quantities of natural gas from West or North Africa? Wouldn't such representations reassure the Europeans on the availability of this supply while at the same time reducing the economic and political bargaining leverage of these producers?

(2) Encouraging Norway to act as an alternative source. Now that there is a new government in Norway, what steps are we taking to investigate possible

alternative gas/oil development and payment arrangements which minimize negative effects on the Norwegian economy of expanding production? For example, are we encouraging the Norwegians to create excess capacity for surge production in any future production facilities they build? What is the surge capacity of current Norwegian facilities? How much could that be improved at relatively low cost if (a) built in? (b) added on? Please answer the above questions in detail.

Answer. (1) One of the key points in our discussions with the Europeans has been the changing outlook in the world gas and oil markets. We have made clear to them that at the present time, it is extremely difficult for long-haul LNG shipments to find a place in the U.S. market. Decontrol of natural gas prices will make LNG even less economical, and we have told the Europeans that we do foresee U.S. gas demand being met largely by North American sources after deregulation. They have accepted that these measures will increase the availability of gas on world markets, but have said they regard the additional supplies as supplements to Soviet gas supplies, and not substitutes.

(2) The new government in Norway has not changed that nation's policies with respect to oil and gas development. The policies of modulated development appear to enjoy wide popular support there. Norway is concerned about the economic and social impact of excessively rapid development of its hydrocarbon resources. We have expressed our willingness to explore with them and with European gas consumers possible financial arrangements which might ease the impact of more rapid development of North Sea resources on Norway's relatively small economy and labor force.

With respect to surge capacity, very large investments in gas production and delivery infrastructure would be necessary. The primary constraint on current Norwegian gas shipments to the major European consuming countries is the size of available pipeline capacity from Norway to Emden. Current capacity is as fully utilized as possible, and the economics of offshore petroleum production and pipeline construction and operation argue for ensuring that any additional infrastructure is also utilized at nearly full capacity, leaving little room for surge transmission of gas. We are nonetheless exploring the possibility for accelerated North Sea resource development with the Europeans. Dutch resources, both on land and in close proximity to the coast, appear to offer a better outlook for possible surge capacity than do Norwegian ones, because Dutch fields are already linked to transmission systems by an extensive infrastructure network.

Question 3. Are European estimates for their total and sectoral expansion of gas demand being critically reviewed in light of (1) the increasingly successful, market-driven adaptation of less energy intensive technologies by the industrialized nations since 1973; and (2) the unprecedented stagnation and downturn in European natural gas consumption since 1979? Please provide the Committee with the substance and conclusions of any such review.

Answer. The United States' assessment of the risks and benefits associated with the proposed Siberian pipeline is based on a critical assessment of prospective European gas demand. In recent consultations with European governments, a State Department lead delegation has underlined recent declines in overall energy consumption, improvements in European industries' energy efficiency, and the unprecedented decline in gas consumption in 1980.

Our allies responded that unofficial European projections of gas demand already assume reduced consumption trends. Furthermore, they noted that the pipeline is a commercial project and that the utilities contracting for Soviet supplies will be responsible for sale of this gas, and should have taken demand projections into account. Finally, European leaders indicated that by increasing their consumption of Soviet supplies, they can shut in more domestic resources, thereby creating an effective safety net and an assured future supply of relatively inexpensive and secure gas.

Question 4. According to an article in the National Journal, Mr. Reagan personally asked Japanese Prime Minister Suzuki at the Ottawa Summit to restrain Komatsu from selling pipelayers to the Soviets until after the allies had a chance to consider the Soviet pipeline issue. Mr. Suzuki apparently informed Komatsu officials that any deal with the Soviets was "on hold" until further notice because of the Reagan request. Yet within 10 days of the Summit, and without consulting the Japanese, the President approved Caterpillar's export license. Administration officials repeatedly testified to Congress that unless Caterpillar was granted an export license, the Soviet Union would close a deal with Komatsu. The National Journal story casts serious doubt on these claims and hence raises disturbing questions about the seriousness and direction of U.S. East-West trade policy. Please provide the Committee with a detailed, and if necessary classified, account of all discussion with the Japanese before, during and after the Summit that relate: (a) to the Caterpillar export license; (b) to any potential Komatsu sale of comparable equipment to the U.S.S.R.; and (c) an explanation of how those discussions influenced the decision to grant the Caterpillar license.

Why were the Japanese not consulted before our decision to grant the Caterpillar license? What explanation, if any, have they subsequently been offered?

Answer. The State Department has informed us that during the course of several discussions with Government of Japan officials before the Caterpillar export license was approved, the issue of restraint on pipelayer sales was raised. The conversations resulted in no commitments. Komatsu had previously sold pipelayers to the U.S.S.R. without any involvement by the Government of Japan. No Japanese export license is required for this non-COCOM item. Japanese cooperation in controlling exports of non-COCOM items has been through case-by-case review of applications for government-supported credits. But Komatsu had not obtained such credits for previous pipelayer sales. Subsequent to the Caterpillar license, Komatsu made another sale, this time with government-supported credit.

Question 5. Didn't the administration also fail to consult, as it had promised, with its partners in the grain embargo before terminating it unilaterally?

Answer. Based upon our discussions with the Department of State, we understand that the administration informed the other grain exporters and key allies of the decision to lift the grain embargo in the days before the announcement was made on April 24. There was sufficient time for us to receive comments from these governments and answer many of their questions before the news became public. While some countries may have preferred a longer lead time, we had to take into account the need to avoid a news leak and disruption of the grain market. In our view, by giving our allies advance notice of the decision and responding to their comments we consulted with them as fully as could realistically be expected, under the circumstances.

Question 6. How can the administration expect more effective cooperation from our allies in restraining exports of sensitive goods and technology to the U.S.S.R. if it appears to be using their willingness to exercise restraint to help secure Soviet markets for American grain, pipelayer or other producers?

Answer. We understand that the Department of State has answered this question.

Prepared Statement of Lionel H. Olmer

It is a privilege to appear before your committee, Mr. Chairman, to discuss the subject of Soviet energy exports and western security.

With implications as important to the rest of the world as for reasons of their own, the Soviets are fast developing their enormous energy potential. It is therefore both timely and vital that your committee examine these implications and thereby contribute to the ongoing process of determining what can and should be done about this expansion.

I welcome the opportunity to describe the Commerce Department's assessment of the significance to trade and security of increasing Soviet energy exports to western Europe. In addition, I would like to discuss some specifics of the Yamal pipeline.

BALANCE OF SECURITY AND BUSINESS CONCERNS

We should understand at the outset that the current policy governing export controls on oil and gas equipment is one which we inherited from the previous Administration. The Reagan Administration is now in the process of examining this legacy. The policy was originally installed in 1978 and has since operated on an ad hoc basis where each new application was examined de novo. Part of what we are doing in our review of this policy is to attempt development of a clear set of standards that will guide U.S. business in its future dealings with the Soviets in oil and gas equipment.

At the Ottawa Summit, the President told our allies of our strong concerns for the future of the western allies should the Siberian pipeline lead to dependence by Europe on Soviet energy. We do not believe dependency on Soviet energy supplies to be in Western Europe's interest; nor do we want the Soviets to increase substantially their hard currency earnings. The Summit participants expressed a willingness to listen to a U.S. presentation of energy alternatives to the pipeline and to our assessment of the economic and financial dimensions involved in its completion.

The Administration has developed the energy alternatives portion, as my colleague from the Department of Energy has explained. An important part of our presentation of alternatives to the pipeline is the Administration's policy to encourage increased U.S. coal exports. The Department of Commerce leads an interagency task force on coal, and I will be happy to provide you with information in that regard following my statement.

In the process of determining what we can do, the Department of Commerce has two very important, and at times seemingly contradictory, charges. First, and most important in our trade relations with the Soviet Union, the export licensing process must guard against transfers of goods and technology which endanger our national security. Past failure to adequately regulate trade in dual-use goods and technology has contributed to greater U.S. defense costs to the extent it has aided in the huge buildup of the Soviet military machine. We believe that application of the Export Administration Act—as Congress intended—will help to retard the modernization of key sectors of the Soviet military-industrial base and at the same time not necessarily penalize American business interests.

The second charge, although more important for our relations with market confers economic benefits. The U.S.S.R. and Eastern Europe provide expanded economies, is trade promotion. Trade with the Soviet Union, as with any country, markets and consequently jobs, for U.S. businesses and farmers, although these markets are not a major factor in our overall economy. The United States has maintained a substantial trade surplus with the Soviets since the late Sixties and this job-creating aspect of our commercial relationship cannot be ignored.

The covergence of these two responsibilities—one to restrict, and the other to promote—is nowhere more evident than in the debate surrounding Soviet energy development and the Yamal Pipeline. As we proceed to examine these charges, two important factors must be kept in mind.

SOVIET ENERGY POTENTIAL AND IMPLICATIONS

The Soviet Union possesses massive reserves of fossil fuels. Their proven reserves of natural gas are the world's largest and proven reserves of coal are extensive. The Soviet Union is the world's leading oil producer, the second leading coal producer, and by the mid-1980's could replace the United States as the world's leading producer of natural gas.

Soviet energy exports provide the foundation of Soviet hard currency earnings, earnings used to acquire Western goods and technology vital to the Soviet industrial and military base. As Chart 1 indicates, Soviet exports of oil and gas to the West have become more important as a percentage of their total exports. Energy as a source of total foreign exchange earnings rose from slightly more than one-half in 1976 to almost two-thirds in 1980. The fastest way—some would argue the only way—for the Soviets to increase or even maintain their hard currency earnings is to develop more quickly their massive gas reserves since oil production is likely to stagnate or fall in the next few years. In order to sustain, much less increase, production, the Soviets are having to exploit reserves that are located to the east and to the north, far away from consuming areas and in permafrost conditions.

Soviet energy development creates a market for Western European and Japanese suppliers upon whom the Soviets must rely to a significant extent for equipment and technology, and a market upon which these suppliers are to some extent becoming dependent. In response to this rapidly increasing demand by Soviet industry for oil and gas equipment, the U.S.S.R. has made substantial purchases from Western firms to fill major gaps left by Soviet domestic suppliers and Soviet technology. Over the past five years, Soviet orders of oil and gas equipment and pipe have totaled about $7.4 billion. Chart 2 shows how these sales were divided among the major suppliers. Although U.S. firms have been important suppliers, other countries have exported far more. For example, virtually all of the orders of large diameter line pipe (those in excess of roughly 36 inches which are used for long distance trunk lines) have gone to Western European and Japanese firms.

Soviet energy development takes on additional significance when examined from the perspective of the importance to Europe of trade with the Soviets. For example, the West German economy is dependent for its health upon exporting; almost one fourth of domestic production goes to foreign markets, and many thousands of jobs are at stake. In certain sectors, the Soviet market is vital for

West German manufacturers. German exports account for about one-third of their total steel sales and over 40 percent of their machine tool sales. Moscow purchases about 11 percent of West German exports from each of these sectors. So, while the Soviets need the equipment and technology, the Europeans, to some extent, need the markets.

It is against these two facts, first, that the Soviet Union is driven by an imperative to develop its natural resources in order to increase its hard currency earnings, and second, that this development creates a market which the Europeans and the Japanese are anxious to exploit (and upon which to some extent they are dependent), that we must measure the U.S. response. This leads more directly into the construction of the Yamal pipeline.

YAMAL PIPELINE: EQUIPMENT AND TECHNOLOGY

The proposed Yamal project when completed will stretch from northwestern Siberia to West Germany and provide long-term delivery of Soviet gas to perhaps six West European countries (West Germany, France, Italy, the Netherlands, Austria, and Belgium). Initially at least, the pipeline will be a single line capable of delivering roughly 3 billion cubic feet per day to Western Europe. Financing packages are being arranged in each of these countries and in Japan to support sales of equipment by Western and Japanese firms—to date, approximately $11 billion at concessionary interest rates.

Total costs of the project in terms of purchases of Western equipment were estimated at about $15 billion but more realistic assessments suggest that as much as $45 billion (which includes Soviet domestic outlays) will have been expended before completion. It will bear the distinction of being the biggest industrial project between West and East ever.

The enormity and complexity of this project are difficult to grasp. As a point of comparison, the Alaska oil pipeline, running about 800 miles from Prudhoe Bay to Valdez, cost about $9 billion and took some 3 years to construct—and employed some 20,000 people. Imagine the difficulties of constructing this pipeline if we did not have the technical expertise and were largely dependent upon foreign equipment! This, then, is our assessment of the situation in the Soviet Union.

In the early years of the Cold War, the United States clearly possessed technological superiority over the entire world and could thus control the availability of equipment or the development of technology. Now, our once clear technological edge has vanished in many areas or been reduced to a thin lead. Although there are a few remaining areas in the oil and gas business in which we have a unique capability, most equipment and technology are available from other sources. Effective control has shifted from being a unilateral action to the more difficult area of multilateral action. A truly effective series of controls that significantly affect oil and gas production will require pursuit of a multilateral approach.

There are, however, a few areas where we could unilaterally or with the cooperation of only a few countries, significantly delay the construction of the pipeline.

Let me give you some examples and identify those Yamal pipeline components whose supply to the U.S.S.R. by U.S. industry might be significant in completion of the pipeline. Overland pipelines for petroleum and natural gas transmission have as their major ingredients:

Heavy duty large diameter welded pipe,
Various valves and regulators,
Gas turbine and diesel engine driven pumps and compressors,
Specialized electronic controls as desired for remote station monitoring,
Construction techniques special to Arctic pipeline installation,
Off-road trucks for pipe section delivery,
Cranes and pipe handling tractors for lifting the long field welded pipe sections onto supports (above-ground in the Arctic and below-ground for temperate climes) and,
Test gear for pressure, X-ray and coating coverage testing of completed pipe sections.

Foreign suppliers can supply almost all the necessary components for the Yamal Pipeline with one or two exceptions. Chart 3 illustrates several categories of equipment where we believe "foreign availability" exists with respect to goods or technology the Soviets need to build the Yamal pipeline. This chart makes it clear that multilateral controls or unilateral controls on certain equipment and technologies could have an effect on the construction of the pipeline.

Japan and West Germany supply most of the world's large diameter pipe. Several countries supply conventional valves and regulators. Two weeks ago, a joint venture of West German and French companies announced a $1 billion contract to deliver and install 22 gas compressor stations for Yamal. Gas compressor stations are powered by gas turbine engines. U.S. industry has a special ability to supply the key components in quantity for the gas turbine engines, outranking the United Kingdom slightly in this capacity. Several countries could provide electronic controls, off-road trucks, and test equipment, although U.S. equipment is more rugged and better suited to Arctic conditions. As you are well aware, both the United States and Japan can supply large pipelayers needed for Yamal.

In general, foreign availability for much of the conventional construction equipment is so extensive that U.S. efforts to restrict exports unilaterally of such equipment to the U.S.S.R. would likely be unsuccessful. Agreement would have to be reached in the application of multilateral controls. In this regard we must seek the cooperation of our friends and allies, more specifically, the British, the French, and the Japanese. These countries are the chief suppliers of oil and gas equipment used for Yamal.

To control these goods and technology, the Export Administration Act gives us two options: national security controls or foreign policy controls. It is important to make this distinction between controls applied for national security reasons and those designed to further foreign policy objectives. The Export Administration Act of 1979 states that it is the policy of the United States to use export controls to restrict the export of goods and technology "which would make a significant contribution to the military potential of any other country or combination of countries which would prove detrimental to the national security of the United States; (and) where necessary to further significantly the foreign policy of the United States or to fulfill its declared international obligation. . . ."

To illustrate the interplay of national security and foreign policy controls in the area of oil and gas production, Chart 4 shows in a qualitative way the proportions of export controls maintained for each. The chart illustrates the various levels of technical information and know-how as well as hardware in the five major segments of the oil and gas industry which are controlled. While there is some overlap between national security and foreign policy controls technical data are restricted for national security reasons and most equipment exports in the areas of exploration and drilling are controlled for foreign policy reasons. In contrast, most machinery and equipment used in the processing, refining and distribution areas may be exported with a general license, meaning without referral to the government for approval. A selection of equipment items for each control category is contained in Table I.

FOREIGN AVAILABILITY

Whether national security controls or foreign policy controls are used, the Export Administration Act of 1979 tasks the Department of Commerce with assessing the availability of foreign goods and technology to the Soviet Union with respect to quantity and quality.

Through much of the early history of the export control program, restrictions were based on the need to defend the nation's security. Working through the multilateral COCOM structure, questions seldom arose concerning foreign availability since the Western Alliance, for the most part, maintained a comparable set of national security restrictions. However, the United States began increasingly to apply controls for foreign policy reasons, which are outside the multilateral COCOM structure. Businessmen began more and more to express irritation and frustration when they saw their license applications delayed or denied at the same time their competitors were free to furnish comparable goods.

Responding to those concerns, Congress began gradually to amend the law to provide less discretion to the executive in the application of export controls, especially those applied for foreign policy reasons, when there was evidence of foreign availability. The intent in this tightening of the law was clear: Congress does not intend for our export controls to cause U.S. industry to lose business to our competitors. Nor did the Congress intend that sales of equipment and technology should be permitted to run counter to our national security and foreign policy interests solely due to foreign availability. These various dimensions of foreign trade must be balanced before decisions are made.

We have not thus far established an adequate mechanism to assess foreign availability on a continuing basis but we are committed to doing a more thorough job in this area, partly with an increase in budget and partly through better coordination with industry and other government agencies. Some excellent work has been accomplished in the oil and gas area by these latter means.

Foreign availability of oil and gas equipment is analyzed by comparing the capabilities of proposed exports with similar foreign produced equipment. Specifications for equipment produced abroad are generally available from foreign suppliers' catalogs and information provided by exporters and the intelligence community. The comparisons are usually based on functional equivalence. Information for foreign equipment concerning such factors as production quantities, ease of operation, reliability, ease of maintenance and availability of spare parts is less readily available. These factors are critical components of any foreign availability assessment.

UNDERSTANDING THE PROBLEMS OF U.S. BUSINESS

U.S. business community reaction to the changing pattern of licensing policy has been mixed. Certainly few, if any, U.S. firms object to the basic concept of national security export controls, although there is often strong disagreement about which items are truly of strategic importance. U.S. companies support the Administration in according priority to national security concerns, but they also desire and deserve to have a clear, consistent and predictable licensing policy that does not unfairly disadvantage them.

Foreign policy controls are viewed less favorably by the business community, since by their nature they result in more uncertainty and are also largely unilateral controls. Businessmen are also skeptical of the effectiveness of these controls as a foreign policy tool. From their perpective, unilateral controls on equipment manufactured in the United States are bound to have but one result: Loss of business opportunities to U.S. manufacturers.

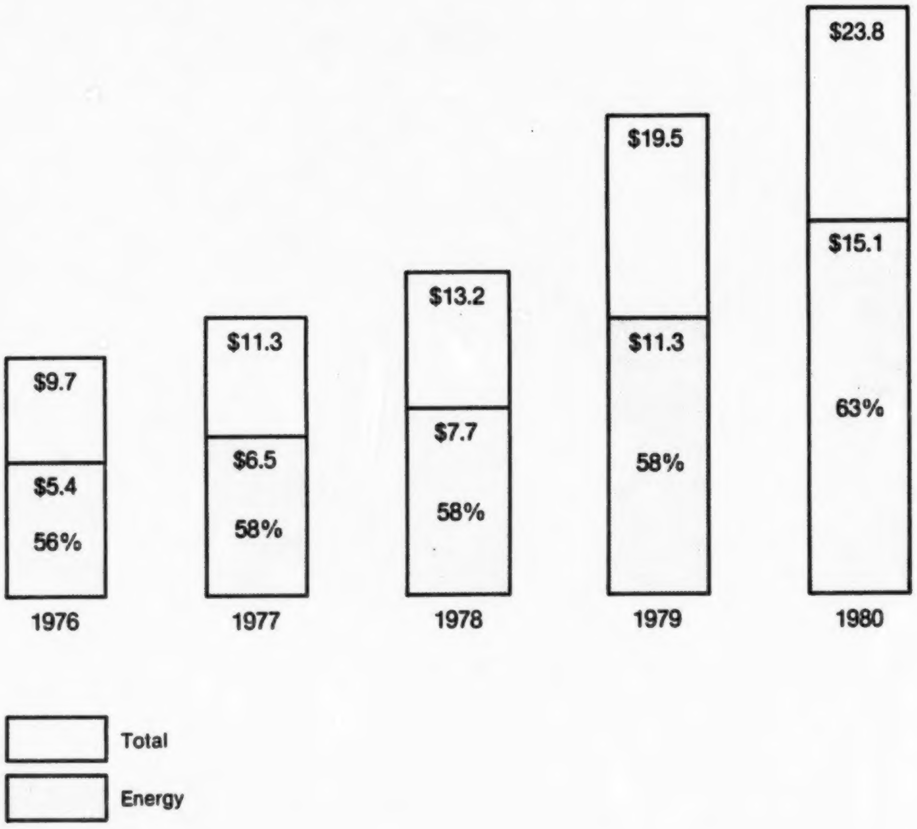
There is another complaint commonly made by the U.S. business community with respect to oil and gas controls and, for that matter, all export controls: the lack of certainty in their application. Many companies have made the point that they are quite willing to "play by the rules" as long as they know what the rules are and as long as the rules are not subject to constant changes.

This Administration understands these problems and will issue clear guidelines once policy is decided. We have already taken the positive steps to revamp the export licensing processing system. We have substantially reduced a large backlog of cases—some 2,000 when the Reagan Administration took office to about 200 presently—and we have instituted an automatic tracking system so that we can readily tell at any given time where in the interagency process a given export license application is pending. Until recently, this was not possible.

We are working toward a system of controls that gives our companies clear guidance and predictability. Controls must protect our vital national security and foreign policy interests, while at the same time permitting U.S. firms the opportunity to compete aggressively in the non-controlled areas. The balancing of these two concerns is not easy, but I can assure you that business interests will be carefully considered as the Administration formulates its position on Western participation in the development of Soviet oil and gas resources.

We are developing through the interagency policy process an Administration position on Yamal which, when completed, will be discussed with Japan and our Western European allies and, to the extent that it may involve recommendations for restraint on exports of technology, or particular products, will seek agreement so that such policy can be effectively applied with consistency. We are hopeful this will be done within the next 2–3 weeks.

Chart 1.
Soviet Hard Currency Exports: 1976-80
(Billions of Dollars)



Source: U.S. Government Estimates

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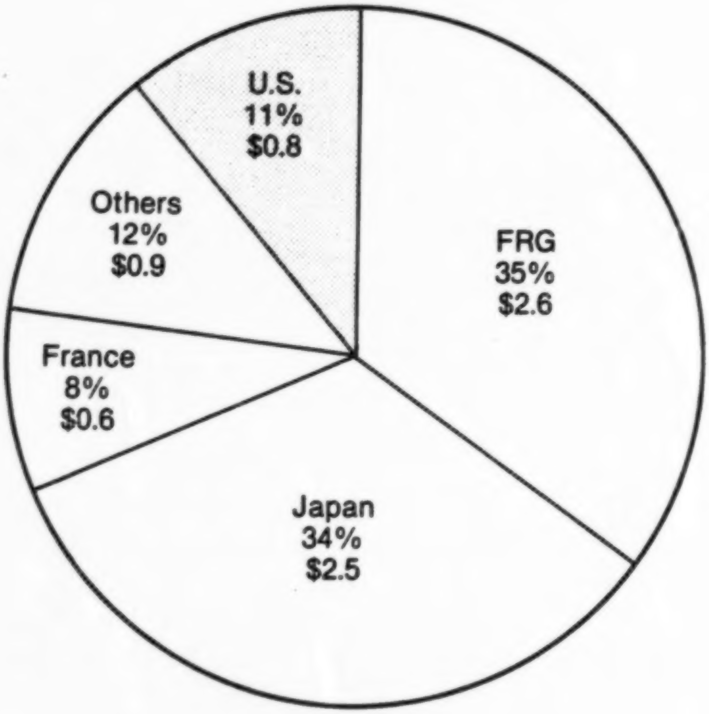
Chart 2.

Soviet Orders for Western Large Diameter Pipe and Oil and Gas Equipment: 1976-80



$7.4 Billion

Source: U.S. Government Estimates

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CHART 3

FOREIGN AVAILABILITY OF OIL AND GAS EQUIPMENT NECESSARY FOR PIPELINE DISTRIBUTION SYSTEM

EQUIPMENT / COUNTRY	PIPE	VALVES/ REGULATORS	GAS TURBINES	ELECTRONIC CONTROLS	ARCTIC CONSTRUCTION TECHNOLOGY	PIPE-LAYERS	OFF-ROAD TRUCKS	TEST EQUIPMENT
UNITED STATES	X	X*	X	X*	X	X	X+	X*
UNITED KINGDOM		X	X	X			X	X
JAPAN	X	X	X**			X		
FRANCE		X		X			X	X
ITALY		X	X**					
FEDERAL REPUBLIC OF GERMANY	X	X		X			X	

* U.S. HAS EDGE IN WINTERIZING OF THIS EQUIPMENT.

** LICENSEES OF U.S. FIRMS.

+ U.S. MOST RUGGED.

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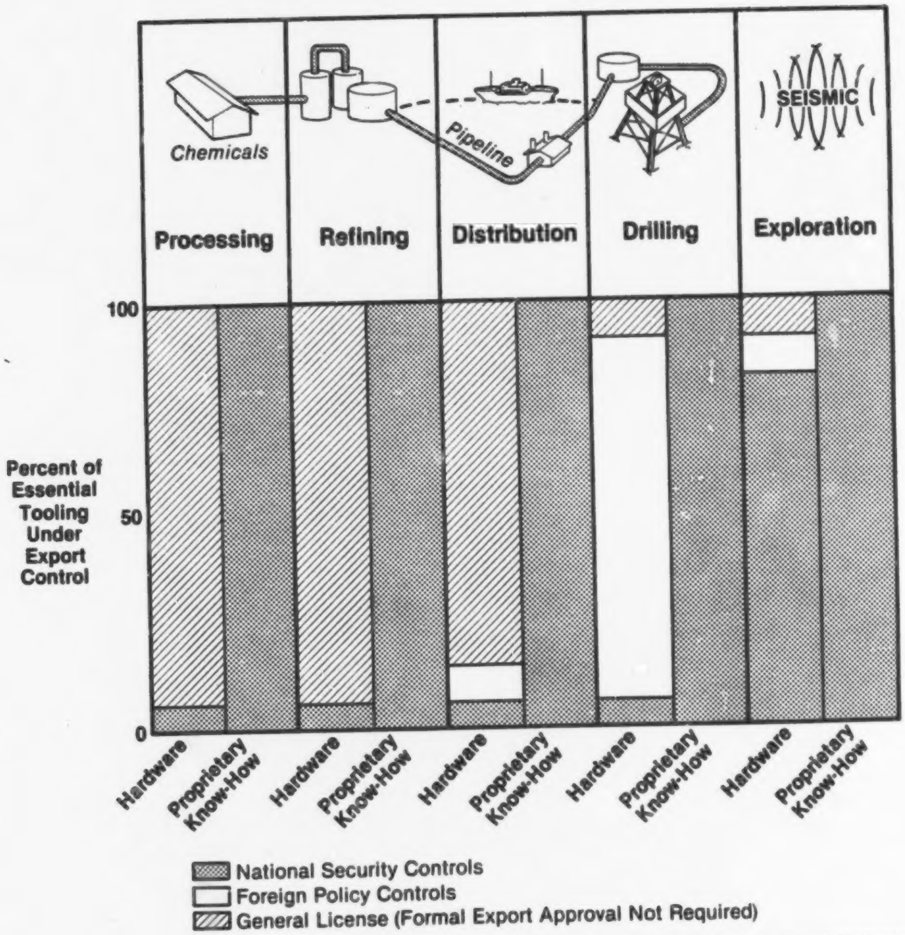
Chart 4.
Equipment for Gas/Oil: Current Export Controls to U.S.S.R.



Source: U.S. Department of Commerce Estimates

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RESPONSE OF MR. OLMER TO A WRITTEN QUESTION SUBMITTED BY SENATOR PERCY

Question. The U.S. Caterpillar pipelayer and the Japanese Komatsu pipelayer seem identical in pictures even down to the grillwork—and the Soviets have already bought several hundred of the Komatsu tractors. The question of selling pipelayers to the Soviet Union doesn't seem to be whether they are, in fact, sold, but rather who does the selling. In the Export Administration Act, the Congress has stated that before impeding U.S. sales of equipment, we should carefully consider what is available from foreign competitors. Therefore, if we are going to fight the Siberian pipeline by denying export licenses for U.S. equipment, we have to be sure that our allies—like the Japanese—will apply similar controls. Otherwise, we are simply punishing our own industry to set an example that achieves no practical result. What do you think the response from the Japanese would be if we restricted export of these pipelayers and the Soviets went to Tokyo in search of similar equipment?

Answer. We agree with the basic premise of the question that wherever possible, multilateral controls are preferable to unilateral restrictions in denying technology and equipment to the Soviet Union. Clearly, Congress does not intend for export controls to cause U.S. industry to lose business to our competitors. This administration will not follow a policy course which disadvantages American business. However, sales of equipment and technology which run counter to our national security and foreign policy interests will not be permitted strictly on the basis of foreign availability. Several consultations were held with the Japanese before the Caterpillar export license was approved at the end of July. These consultations did not persuade the U.S. Government that the Japanese would put a hold on a Komatsu sale of pipelayers to the Soviet Union. Komatsu had previously sold pipelayers to the U.S.S.R. without any involvement by the Government of Japan. No Japanese export license is required for this non-COCOM item. Japanese cooperation in controlling exports of non-COCOM items has been through case-by-case review of applications for government-supported credits. But Komatsu has not obtained such credits for previous pipelayer sales. Subsequent to the Caterpillar license, Komatsu made another sale, this time with government-supported credit.

RESPONSES OF MR. OLMER TO WRITTEN QUESTIONS SUBMITTED BY SENATOR JACKSON

Question 1. Will the use of any U.S. technology be involved in the West Siberian Pipeline project? If so, what is it and why should the export of this technology be approved? What would be the effect on the commercial viability of the project if this technology or other Western technology were unavailable?

Would the embargo of any U.S. or other Western technology impede implementation of the West Siberian Pipeline project or impair its commercial viability? What consideration has the Administration given to this matter? For example, what are the positions of the Department of Energy and the Department of Defense? In light of the enormous potential advantages of the project to the Soviet Union and the potential disadvantages to the West, including increased Soviet leverage over the West, the acquisition of hard currency and Western technology and economic benefits which mitigate the dilemma confronting the Soviet Union in choosing between military and civilian investment, has the possibility of a U.S. or a coordinated Western embargo of technology for the West Siberian project been seriously studied?

Answer. The administration has under high level review issues related to licensing policy for the export to the U.S.S.R. of oil and gas equipment and technology.

No U.S. equipment or technology has been licensed for export to the U.S.S.R. for the Siberia-West European pipeline project. Some U.S. equipment and technology is being sought for use in the project. There has already been one British application in COCOM for a U.S. computer for use on the Czechoslovakian portion of the pipeline. This application was denied on security grounds. There are pending French computer sales for the pipeline, and comparable computers are also available from Germany, the United Kingdom, and Japan. Accordingly, there would not be a Soviet dependence on U.S. computers. One of the largest potential involvements of U.S. technology is related to gas turbine engines for compressor stations. Critical U.S. turbine-hot section components—computers, flow paths, blades, vanes and other rotating components—were specified on 41 of the 42 compressor stations. Under existing regulations such gas compressors and parts do not require a validated export license. The Soviets probably selected the gas engine turbines because they are less costly, embody proven technology, and are apt to require less maintenance once they are commissioned. Gas turbines are also produced in the United Kingdom. The Soviets may also seek other U.S. products such as gas field equipment, pipelayers, bulldozers and pipeline maintenance equipment.

The United States has some, albeit limited, unilateral ability to hinder the pipeline by denying key components for its construction. A U.S. embargo on compressor turbine equipment for the pipeline would delay, though probably not stop, the pipeline's construction. We also expect that, given the length and difficulty of such a large scale pipeline project, construction delays will occur. Lengthy delays could impair the economic viability of the project.

Clearly, with the challenges the Soviets face in construction of such a pipeline of unprecedented proportions, they will seek the very best equipment available. The United States has unique "hands-on" expertise in arctic construction techniques. Much of our equipment (such as off-road trucks and testing devices) is more rugged and better suited to operate reliably under such conditions. As already mentioned, U.S. industry also has the capability to supply the key components in quantity for the gas turbine engines used in the compressor stations. The U.S.S.R. in contrast is only able to supply, from domestic sources, a small portion of the large gas turbine units needed to increase their natural gas pipeline capacity. In short, there is strong evidence the project may not be able to proceed smoothly without U.S.-origin equipment.

A unilateral U.S. embargo of equipment for the pipeline could spawn or speed up the creation of alternate suppliers of equipment in which the United States is currently the world leader. Alternatively, in the event a unilateral embargo were to cause a significant delay in construction, the passage of time could make energy alternatives more attractive and create new opportunities for U.S business.

A multilateral equipment embargo towards the pipeline would, of course, be much more effective in impeding the project. The cooperation of the United Kingdom, Japan, and France would be especially important. These countries have not demonstrated any interest in participating in a multilateral embargo. France, Germany and Italy will buy the bulk of the pipeline's gas, and have already received large contracts to supply equipment for the project.

Question 2. What are the estimated Soviet hard currency earnings from the West Siberian Pipeline project? What are the anticipated sources and amounts of financing for this project? What are the estimated Soviet hard currency earnings in the absence of the project?

Answer. When the pipeline is fully operational—which may not be until the late 1980s—it should be capable of exporting about 40 billion cubic meters of natural gas per year to Western Europe. There is no way to accurately forecast the amount of hard currency the U.S.S.R. will earn from its energy exports. The magnitude of future earnings depends upon the volume and price of natural gas and oil delivered to the West, which in turn depends upon a number of critical variables such as political conditions in the Middle East, the world price of oil, and the rate of Soviet energy production. There is, however, the potential for annual export earnings from this project conservatively estimated at $4–$7 billion in current prices. In addition, Soviet hard currency earnings from gas delivered under existing (i.e. non-Yamal) contracts would be another $3.5 billion.

By way of comparison, Soviet hard currency earnings from merchandise exports totaled about $24 billion in 1980, excluding sales of gold and military-related equipment, which fluctuate annually. It is difficult to project the value of total Soviet hard currency earnings at the time this project, if it were to go forward, comes on-stream. Much depends on what happens to Soviet oil exports (currently accounting for about half of hard currency exports) and arms sales, and developments in the world gold market. In the absence of the pipeline project, Soviet hard currency earnings from trade in the mid-1980's probably would be in the range of $13–20 billion (1981 prices), depending on the availability of oil for export. The comparable estimate for 1990 would be about $13 billion.

We expect that credits to finance the purchases of Western equipment and large-diameter pipe will materialize in the countries supplying the goods—primarily but not exclusively West Germany, France, Italy, and Japan. These will include some government and/or government-backed credits. A consortium of West German banks already has agreed on long-term credits to cover West German equipment sales. France, the United Kingdom, and Italy have agreed to provide or will be providing official credits at 7.8 percent for eight years. Though it is not clear what the final price tag will be for the Western equipment and pipe, the Soviets themselves have mentioned a figure over $7.4 billion, which would allow for more than $6 billion in credits assuming normal down payments are made. Even such a large figure for equipment and pipe could be low, perhaps by as much as a factor of two. The Soviets may pay cash for some equipment purchases where credits are not available.

Question 3. Soviet defense spending has been increasing in real terms for more than 20 years and, in recent years, sluggish Soviet economic growth has caused military expenditures to take an increasing share of Soviet GNP. Would termination of the West Siberian pipeline project with the loss of hard currency earning and Western imports cause increased Soviet economic problems and make it more difficult for them to maintain the current pace of their military spending?

Answer. Termination of the Yamal pipeline project, resulting in the substantial loss in potential export hard currency earnings toward the end of the decade, would sharply reduce Soviet ability to purchase agricultual commodities and high-technology machinery from the West. Hard currency earnings from trade are now about $24 billion; by 1990 these earnings could be down to about $19 billion with revenues from the pipeline. Cancellation of the pipeline could reduce the merchandise export earnings to about $13 billion. The foregone imports of Western machinery and technology would significantly increase tensions and allocational problems within the Soviet economy and retard further efforts to modernize the country's backward civilian industries. Maintaining the pace of military spending would be made more difficult, but the momentum of military production would probably be maintained, though economic and political costs would likely rise. Despite mounting economic problems however, it is unlikely the military sector would lose its very high priority.

Question 4. What alternative energy resources including North Sea gas could fulfill the Western European energy needs which the West Siberian Pipeline project is intended to fulfill? Are these alternatives cost-effective and commercially viable? What are the potential economic benefits to the United States or other Western nations of developing these alternatives instead of the West Siberian Pipeline project?

Answer. In discussions with the Europeans in early November the United States Delegation discussed a number of energy alternatives to the pipeline for Western European nations. The principal alternatives discussed were:

Gas.—African gas is a possible partial alternative to Soviet gas. Nigeria plans to build a major export facility for liquefied natural gas, half of whose output was earmarked for the United States. Changes in gas market conditions have rendered it unlikely that the U.S. companies involved will take the gas, thus making more available for shipment to Europe. Similarly, Algeria has gas contracts with U.S. firms whose fulfillment has become unlikely because Algerian gas is not competitive in the U.S. market. The combination of Algerian and Nigerian gas currently under contract to the United States could replace almost all the prospective Siberian pipeline deliveries. However, Algeria's price demands have to date been unacceptable to the Europeans and Nigeria's plans to develop its gas reserves have been delayed by administrative and price problems.

Gas resources may soon be developed for export in Cameroon and Qatar as well, thus, providing even more supplies for the world market.

Within Europe, additional gas is available in the North Sea, but additional development there requires long lead time and may not be economical at the present time.

Coal.—Coal is found in abundance in Western nations and can be an economical alternative to Soviet gas in many applications.

The United States is committed to providing access to a reliable, economical supply of coal to its friends and allies. We are providing for an increased flow of coal from the United States to Europe: a 75 percent increase in coal export loading capacity is currently under construction; the Administration has proposed legislation to speed up port dredging which may be needed for the 1990's; regulatory barriers to coal infrastructure development are being examined, and many will be removed; we are working in the International Energy Agency to improve understanding of the coal market and have told our European customers that we are prepared to study with them additional measures to increase coal trade and use. Assistant Secretary of Commerce Morris traveled to Western Europe in early December to discuss additional coal purchases from the United States.

Nuclear.—The administration has announced its commitment to the development of nuclear power in the United States and has stressed that the United States will reestablish itself as a reliable partner in the international nuclear energy arena. Our more positive position on reprocessing and expanded nuclear cooperation particularly in the back end of the fuel cycle, could help to mitigate some of the problems associated with the accelerated development of West European nuclear power.

Oil.—Oil itself may be an important alternative to Soviet gas. Structural changes in oil consumption patterns could keep oil demand well below production capacity. The United States is making a strong contribution to this trend. U.S. oil imports this year are running at about 5 million barrels per day, 3½ million barrels below their 1977 peak.

One argument for the proposed Siberian pipeline has been that it would generate employment for depressed European regions and industries. The development of Western energy alternatives, however, may create many more jobs in Europe and the United States over the long run. Western capital would be directed to building its own mining, energy extraction, transportation, and industrial infrastructure. Also we have pointed out to the Europeans that the low interest rate of the export financing they are reported to be offering the Soviets on equipment for this project implies a large subsidy and that comparable benefits would accrue to them if they spent the sums on other major industrial enterprises. This could include construction of facilities necessary to use the alternative sources mentioned above. The Europeans, however, insist the cost of subsidies from concessional export financing will be compensated in higher equipment prices.

Question 5. In 1980, the Soviets threatened Western Europe and Japan with a cut-off of petroleum supplies in an effort to undermine support for U.S. sanctions against the Soviet Union following the invasion of Afghanistan. What assurance do we have that Soviet control over Western Europe's gas supplies will not be used as a political blackmail weapon to adversely influence the foreign and defense policies of our NATO allies?

Answer. Our concern is precisely that the Soviets would attempt to exploit Europe's dependence on Soviet gas to gain political or economic benefits. Veiled threats of supply cut-offs might be effective in influencing regions and sectors of European economies dependent on Soviet gas to urge their governments to avoid actions which they fear might lead to interruptions of deliveries. In 1980, for example, the Soviets never overtly threatened a petroleum cut-off to Western Europe and Japan, but they did mount a public affairs campaign emphasizing the fact that the U.S.S.R. was a significant supplier of energy to some Western countries.

We have to anticipate that, in a crisis, the Soviets might interrupt the flow of gas to achieve political purposes. They have done so before to Israel, Yugoslavia and the People's Republic of China. The Soviets are bringing political pressure to bear on Poland through a combination of political, economic and military means. Among them has been the manipulation of energy supplies to Poland as the temperature drops toward winter and Polish industry plans its winter production.

Question 6. If the West Siberian Pipeline project is built, what percentage of Western Europe's gas supplies will come from the Soviet Union? Please provide estimates for Western Europe as a whole and by individual country.

Answer. The projections are provided in the following table.

WESTERN EUROPE—DEPENDENCE ON SOVIET GAS AS A PERCENTAGE OF TOTAL GAS CONSUMPTION AND OF TOTAL ENERGY CONSUMPTION

	1979		1990[1] (after completion of 1 line of Siberian pipeline)	
	Gas	Energy	Gas	Energy
West Germany	19	3	32	6
France[2]	0	0	25	4
Italy	28	5	28	5
Netherlands	0	0	7	3
Belgium	0	0	35	5
Austria	59	8	82	13

[1] Based on individual government estimates of gas and total energy consumption and completion of 1 line. Construction of a dual line would increase dependence.

[2] Contracted volumes of Soviet gas were delivered to Italy in exchange for Dutch gas until February 1980.

Note: Data from government sources.

If one strand of the Siberian pipeline is built, it is estimated that about one quarter of Western Europe's natural gas supply will come from the USSR.

Question 7. Is one purpose of the West Siberian Pipeline project to reduce European reliance on Middle East oil supplies? What assurances do we have that Soviet control over Western Europe's gas supplies will not be used as a "gas weapon" on the pattern of the Arab "oil weapon" thereby increasing rather than reducing Western energy security vulnerability?

Answer. Europeans argue that one purpose of the pipeline is to reduce European reliance on Mideast oil supplies. They fear they are far too dependent on a few unstable nations for oil. Middle Eastern oil, for example, constitutes 55 percent of European oil supplies, and oil in turn provides over half of European energy. In the recent past, events in the Middle East have shown that energy supply crises can be provoked both by use of oil as a "weapon" and by political upheavals which have as a consequence reduction of available oil supplies.

There is, however, no assurance that Soviet gas will not also be used as a "weapon", or—perhaps more likely—as a lever with which to gain political and economic benefits, just as certain Middle Eastern countries have done. This U.S. point of view has been made clear to the Europeans. The Europeans argue that they have in place, or will develop, a "safety net" of gas reserves or alternative energy sources to mitigate their vulnerability to a Soviet gas cutoff.

PREPARED STATEMENT OF ROBERT D. HORMATS

INTRODUCTION

Mr. Chairman: I am pleased to be here, along with my colleagues from the Departments of Energy and Commerce, to discuss the proposed Western Siberia-to-Western Europe Natural Gas Pipeline. As you know, this prospective project has been the subject of considerable international and domestic controversy.

This attention is well deserved. Issues relating to the pipeline are among the most complex facing us and our European Allies. This issue cuts across a number of policy areas including East-West commerce, Alliance politics and energy security. The West European-Soviet pipeline issue, and the manner in which the Western Alliance deals with it, will have significant short and long term security, political, energy and economic ramifications.

It is no secret that the United States has serious concerns about the pipeline. Within the Executive Branch, we have explored a broad set of analytical questions in the context of our deliberations on this project and East-West energy relations more generally. Our strong concern is that this project crosses the threshold of a prudent level of European dependency on Soviet gas. But because the Europeans see this project as enhancing their energy security by permitting them to diversify away from oil and unpredictable suppliers, our simply objecting to the project would be an inadequate response. We therefore plan to suggest to the European countries alternative ways in which European energy security can be enhanced, including measures they can take on their own as well as those on which we and they can cooperate.

My colleagues from other executive agencies will discuss commercial factors and alternative energy options available to the Europeans. I will address my comments to the energy security aspect of the pipeline and the role of gas in Europe's energy profile. I will, of course, be happy to discuss a broader range of questions with you in the course of questions and answers.

EUROPEAN GAS CONSUMPTION

During the 1970's, natural gas became an increasingly important fuel in European markets. A number of factors, including the advent of advanced exploration and production technologies, discovery and development of additional European gas reserves, and the decline of the European coal industry, contributed to the expanded production and use of gas.

Of particular importance was the economic and political volatility of international oil markets after 1973. After the 1973 OPEC oil embargo, we and other industrial nations recognized that we had become excessively dependent on insecure and expensive supplies on imported oil. A reduction of this oil import dependence became a central element of the energy policies of most industrial nations. We pursued this objective vigorously in the International Energy Agency and at annual economic summit meetings. The oil supply interruptions of 1979 and 1980 gave new impetus to reducing reliance on oil.

The problem of oil import dependence was especially acute in Europe. Most European nations were more dependent on oil imports than we. (Chart 1)[1] Furthermore, a much larger share of these imports came from the politically volatile Gulf region. (Chart 2)[1] European leaders began to view expanded gas use as an effective way to reduce their national dependence on unpredictable imported oil.

The volume of natural gas consumed in Western Europe increased by about 50 percent between 1973 and 1980. This growth rate significantly exceeded that of total energy demand; thus gas's share of the energy market increased rapidly. (Charts 3 and 4)[1] In 1973 gas provided less than 10 percent of total West European energy needs. By 1980, gas accounted for approximately 14 percent of total Western European energy consumption and 18 percent of the energy consumption of the six countries (Austria, Belgium, France, Germany, Italy and the Netherlands) currently involved in the Siberian pipeline negotiations.

Gas use grew most rapidly in the residential and commercial sectors, where consumption rose by nearly 80 percent between 1973 and 1979. Industrial gas use expanded much more slowly, but still increased by 27 percent in this period.

Price competitiveness was probably the conclusive selling point for European gas consumers during the 1970's. In 1973, gas prices were approximately two-thirds that of crude oil. But between 1974 and 1977, the price was closer to one-half that of crude. (Table A) This favorable cost relationship, and generally more stable and predictable price encouraged expanded gas consumption and substitution for oil.

TABLE A.—WESTERN EUROPE ENERGY PRICES

[In U.S. dollars per million Btu]

	Natural gas[1]	Crude oil[2]	Residual fuels[3] (3.5-percent sulfur)	Heating oil[3]
1973	0.44	0.68	0.73	1.91
1974	.69	1.94	1.66	2.21
1975	1.07	1.90	1.47	2.29
1976	1.18	2.02	1.59	2.44
1977	1.54	2.22	1.80	2.71
1978	1.83	2.23	1.79	2.95
1979	2.14	3.22	3.17	7.10
1980	3.22	4.06	4.04	7.04
1981	[4]3.32	[5]5.88	[5]3.99	[5]6.59

[1] Average delivered price of Dutch gas to French border.
[2] Weighted average of OPEC official sales price.
[3] Average price f.o.b. Rotterdam.
[4] January.
[5] July.

Note: Data from CIA.

Substantial growth in the gas market enabled producers and consumers to secure long-term supply agreements which justified investments in new exploration and development, pipelines, LNG tankers and facilities, distribution networks, and new or converted gas powered equipment. Furthermore, the rapid expansion of consumption and investments created a new enthusiasm in the gas industry and the impression that the unprecedented rates of growth would continue.

It appeared that European consumers could use all gas made available to them. The expectation that gas demand would grow sent analysts off to their computers to predict the scale of future gas trade, and government and industry officials off to the market place and foreign capitals in search of new gas sources which would meet future needs.

THE ROLE OF IMPORTED GAS

Before the gas boom of the seventies, indigenous European production had met almost all European gas demand. Europe first began importing small amounts of gas in 1965. As illustrated by Chart 5,[1] total West European dependence on

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[1] Charts follow at end of statement.
[1] Charts follow at end of statement.

imported gas was less than 5 percent in 1973. But it zoomed to over 16 percent in 1980.

Growth in indigenous production, largely in the North Sea and the Netherlands, still satisfied more than half of the increased gas demand from 1973 to 1980. However, gas discoveries did not keep pace with rising consumption, and the expected life of known European reserves began to drop. In 1979, for example, experts estimated that known European gas reserves would last only 19 years at the then present rates of production.

More immediately, other technical and political factors promised to limit the amount of gas indigenous producers could supply. Norway and the Netherlands adopted conservative production policies designed to extend the life of their reserves. Many of the most easily accessible European reserves were nearing the end of their productive lives. Other key European fields were already producing at the highest sustainable rates.

Faced with a growing market and rising prices, the European gas industry increased drilling in deep water off-shore areas, and at more marginal on-land sites. But this new indigenous production promised only to maintain a constant—or perhaps slightly falling—level of European output. In 1980 European Governments projected that total European gas production would decline from 3.1 million barrels per day of oil equivalent (MMBDOE) in 1980 to 2.8 MMBDOE in 1990. European gas and government officials therefore began to consider how they could increase gas imports.

For a variety of technical, financial, and political reasons, the Soviet Union seemed the most promising source of imported gas. Soviet gas reserves are massive, more than one third of total known world reserves. The Soviet gas could be shipped to Western European markets by overland pipelines, a cheaper and technically more reliable means than LNG tankers. Energy sales to Western Europe are an important source of Soviet hard currency earnings (over 50 percent in 1979), which finance Soviet purchases of European machinery and manufactured products. Expanded purchases of Soviet gas promised to generate major new orders and jobs for the ailing European steel and machinery industries in particular. Finally, key European leaders have viewed expanded East-West commerce as a means for building political ties and moderating Soviet behavior.

From the Soviet perspective, European interest in Soviet gas was most welcome. The Soviet Union will probably have to cut back oil exports during this decade due to increasing domestic demand and a leveling off, or perhaps even a decline, in production. Gas appears to be one of the most readily available new hard currency earners. In addition, European purchases of Siberian gas would help the Soviets finance the infrastructure costs of gas exploration and exploitation in outlying regions.

SOVIET GAS

The setting which I have just described gives insight into the European desire, in 1978, to explore the prospects for a Siberian pipeline. Indeed, at that time, European leaders believed that their political-economic interests justified a large, long-term gas contract with the U.S.S.R.

But since 1978 the economic factors affecting East-West gas trade have changed dramatically. Overall energy growth rates are down and markets are soft. European gas demand fell last year for the first time ever, declining by 4 percent. Although demand for gas outpaced that of other fuels, it appears that the rate of substitution of gas for oil has slowed. Official estimates of future gas demand have been revised downward and the market is likely to be weak for a considerable period of time.

These fundamental changes in world energy markets raise serious questions as to whether the volume of gas contemplated for transmission through the pipeline can in fact find a market in Western Europe, or alternatively, whether the Soviet price expectations are not so high as to make the gas uncompetitive in most European markets. While the Soviets may wish to set the fob price as close as possible to the Btu equivalent of crude oil, in the current market and for the foreseeable future such a high price will almost certainly make it impossible for the gas to be competitive with other forms of energy in Western Europe.

The Europeans and Soviets have taken account, to some extent, of the softening of the oil and gas market. In the beginning of 1980, reports noted the prospect that the Soviets and Europeans would construct a dual strand pipeline from Siberia to deliver over 4 billion cubic feet perday (bcf/d) to Western Europe. (This would be equivalent in energy terms to about 700,000 barrels of oil daily.) The Soviets and West Europeans are now considering constructing a dual strand pipeline in two distinct stages. The first strand could move roughly 3.0 bcf/d, or the equivalent of about 500,000 barrels of oil daily. But even this volume is likely to be difficult to sell unless the price is extremely competitive.

Furthermore, in political terms, the risks involved in the pipeline project seem greater now. In the wake of the invasion of Afghanistan and developments in Eastern Europe, Western countries have become more attentive to the full set of risks associated with East-West energy trade.

ENERGY SECURITY, IMPLICATIONS

Let's consider how the proposed Siberian pipeline could alter the energy security of the Western European pipeline participants. Table B shows how European dependence on Soviet gas would grow from 1979 to 1990 if the pipeline were built to deliver the equivalent of over 700,000 barrels of oil daily. In most countries dependence on Soviet gas would more than double. The third column of table B presents rough estimates of comparable figures for the currently planned scaled-down pipeline, which would deliver the equivalent of over 500,000 barrels of oil daily.

TABLE B.—WESTERN EUROPE: DEPENDENCE ON SOVIET GAS AS A PERCENTAGE OF TOTAL GAS CONSUMPTION AND OF TOTAL ENERGY CONSUMPTION

	1979		1990[1] original 4 bcf/d project		1990, 3 bcf/d project	
	Gas	Energy	Gas	Energy	Gas	Energy
West Germany	14	2	29	6	24	5
France[2]	0	0	23–28	4	17–20	3
Italy	29	5	29	5	23	4
Netherlands	0	0	10	4	6	4
Belgium	0	0	32	8	19	2
Austria	59	12	82	18	62	15

[1] Based on individual government estimates of gas and total energy consumption.

[2] Contracted volumes of Soviet gas were delivered to Italy in exchange for Dutch gas until February 1980.

Note: Data from CIA.

One could argue, and many European energy officials have, that projected levels of European dependence on Soviet gas are small. With the scaled-down one strand pipeline, dependence on Soviet energy will be 5 percent or less of total energy consumption in all countries except Austria. The Europeans conclude, therefore, that the Soviets would not gain any real leverage as a result of this pipeline.

European officials further argue that their use of Soviet gas is a necessary part of their strategy to reduce their oil consumption and to diversify their sources of energy. They postulate that Soviet gas imports, by reducing their dependence on fuels from the Middle East, would, on balance, improve their overall energy security. They note that the Soviet Union has never in the past shut off energy shipments to West European countries for political reasons, and that Middle Eastern suppliers have. They contend that the only immediate alternatives to increased Soviet gas imports would be increased dependence on oil and gas from the least reliable Middle Eastern suppliers.

However, the volume of Soviet gas as a percentage of total European energy consumption is not a sufficient indicator of economic and political vulnerability. This is true for two major reasons.

First, gas is a difficult fuel to replace on short notice. Unlike oil, there is no spot market. Gas trade requires large start-up investments in pipelines or LNG facilities. Furthermore, it is much more expensive and technically challenging to hold large strategic stocks of gas as compared to oil. Certain regions will be very heavily dependent on Soviet gas and might apply strong pressure on national governments to avoid actions which could result in an interruption. In the event of an interruption, Soviet gas could not be readily replaced unless there were excess capacity in other parts of the European energy grid.

Second, as noted above, residential and commercial consumers are particularly dependent on gas. A cut-off of Soviet gas would be particularly onerous for these politically sensitive sectors. Thirty percent of gas from the pipeline is earmarked for residential use. Residential and commercial consumers are the least able to absorb an abrupt fuel supply interruption. Homeowners have limited capacity to switch easily to another fuel. Furthermore, gas prices would probably rise precipitously in the wake of a Soviet embargo and thus place a harsh financial burden on homeowners and commercial businesses.

Hence, West European vulnerability to Soviet gas leverage could be substantial.

It is important to note that in the past the Soviet Union has used energy exports as a political lever, interrupting supplies to Yugoslavia, Israel, and China, among others. In addition, technical or seasonal difficulties—perhaps complicated by the need to divert gas from export to domestic use to make up for reduced deliveries of Iranian gas—forced the Soviets to slow some gas shipments to the West last winter and spring. The probability of further technical or seasonal interruptions may increase as the Soviets try to ship more gas from outlying and more risky Siberian provinces to Western Europe.

It is, of course, difficult to speculate just how Soviet energy leverage might be applied. But it is not unreasonable to assume that the Soviets from time to time would see the dependence of Western Europe on Soviet gas as an opportunity to try to obtain political and/or economic benefits. Even in the current bargaining stage, the Soviets have effectively used their leverage to secure most generous terms and to force the Europeans to underwrite much of the risk.

THE NEED TO MINIMIZE VULNERABILITY

In shaping our policy on this issue, we recognize the major differences between the United States and Europe in terms of vulnerability, and the strong European determination to reduce dependence on oil and unpredictable suppliers thereof. We recognize also that the final decision on the pipeline is Europe's and that the consequences of their decision, for good or ill, will be felt primarily by Europeans, not Americans.

But we are Europe's friend and ally. To the degree that the pipeline affects Europe's political well-being and to the extent that it opens Europe to the threat of disruptions or indeed to actual disruptions of gas supplies, it also affects us. We therefore feel an obligation to present our concerns and our suggestions for improving European energy security through expansion of the supply of more reliable energy resources, diversification of European energy supplies, and better coordination of Western energy planning and policies.

We believe, in short, that there are alternatives to Soviet gas which better serve European economic, security and political interests.

We also are aware of reports that strand one of the pipeline has been virtually agreed upon. Anticipating this, the Europeans themselves are developing a mechanism to respond to interruptions through a safety net based on:

The flexibility of indigenous European gas production;

Their ability to substitute other fuels (oil or coal) for gas used in electric powerplants and industry;

Significantly expanded stored gas reserves; and

The integration of European national gas grids.

CONCLUSION

The United States, at the Ottawa Summit, expressed its desire to expand the Western dialogue on energy security. We plan to discuss with our European partners alternatives to Soviet gas which would limit potential Soviet leverage and improve the security of energy supplies. In addition, we need to continue to consider in the IEA and in the Economic Summits coordinated long term energy supply strategies, which will provide Western countries attractive alternatives to further dependence on Soviet resources, and set a common Western understanding for energy trade with the Soviet Union. I am confident that a cooperative effort working toward complementary United States and European energy futures will be able to head-off potential tensions, and build a stronger and more stable economic foundation for the Western alliance.

In summary, Mr. Chairman, let me state that the central element of our policy on the pipeline is our serious concern about its implications for European vulnerability. We want to work with the Europeans to suggest what they can do, and what we can do together, to find alternatives which are more secure and economic than Soviet gas. We want to do this in a way which is based on a common assessment of the risk and a common approach to avoid it, and in a way which strengthens the United States-European relations rather than weakens them. We do not regard this as an issue which should be resolved by the United States attempting to dictate what Europe should do, but rather by a process in which we raise the genuine and serious concerns we have, put forward our suggestions, and attempt to help Europe to find alternatives and thus to minimize its vulnerability to energy supply interruptions.

CHART 1

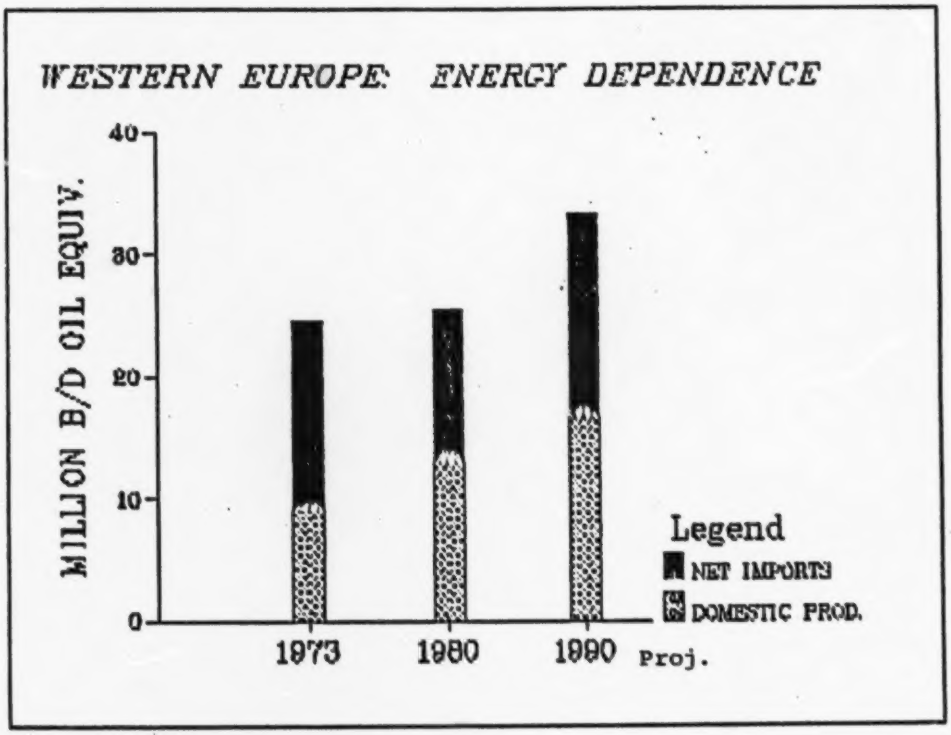

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Table 1

Illustrative List of Commodities in the Oil and Gas Areas by Type Control

Type Control	Processing	Refining	Distribution	Drilling	Exploration
General License	o Tire building machinery o Polymer Mfg. Equipment	o Distillation towers o Reactor vessels	o Compressors o Ships o Bulldozers	o Steam generators o General piping	o Survey Ships w/o seismic equipment
Foreign Policy			o Pipelayers o Pipewrappers o Pipe-Coating equipment o Special mfg. machinery for pipelaying, o Coating & wrapping equipment	o Blow-out preventers o Rigs o Drill pipe o Well head assy's o Packers o Rotary tools o Subsea systems o Offshore Rigs o Manufacturing equipment for drilling gear	o Seismic "thumper" o Land based seismic equipment o Low performance magnetometers
National Security	o Chem. formulations o Engineering support o Computer process controls	o Cracking o Technical training o Computer process controls o Computer data acquisition	o Pipeline design o Crew training o Computer controls & data acquisition equipment	o Rig design o Crew training o Computer logging controls o High speed tape recorders	o Data processing & interpretation o Computer data acquisition equipment o Seismic Streamers o Gravity meters

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CHART 2

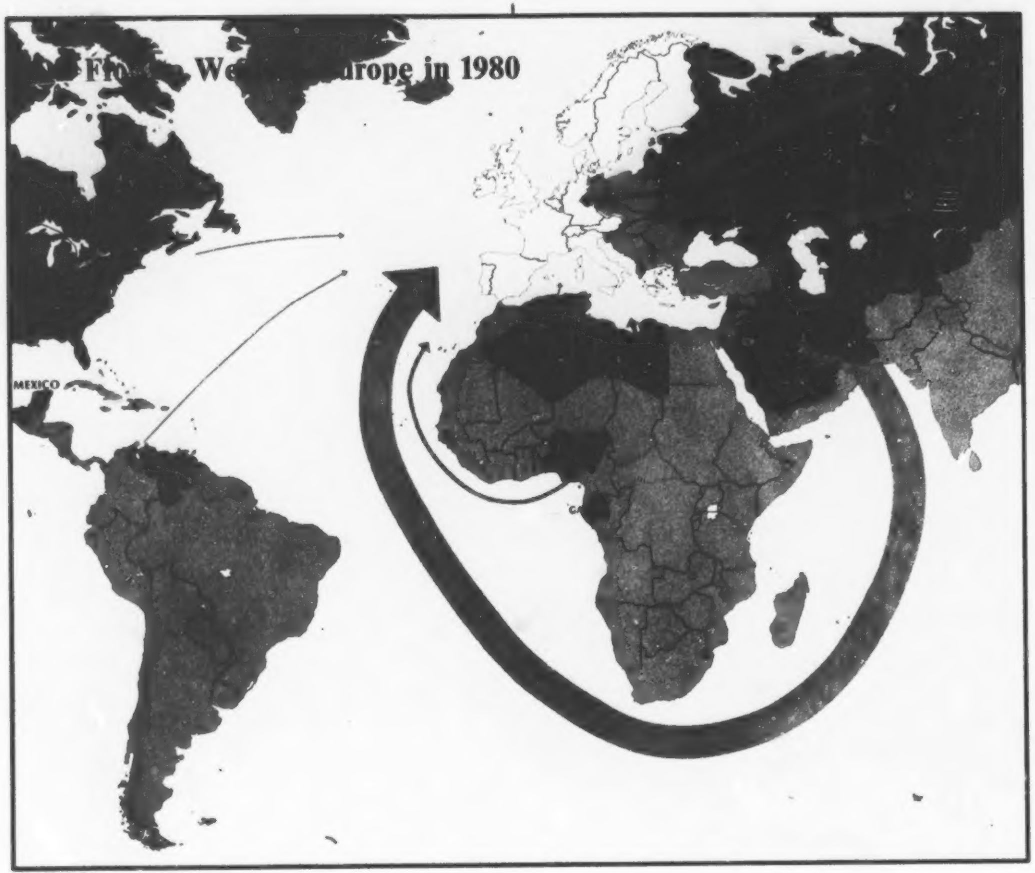
Fl[illegible] We[illegible]urope in 1980
MEXICO

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CHART 3

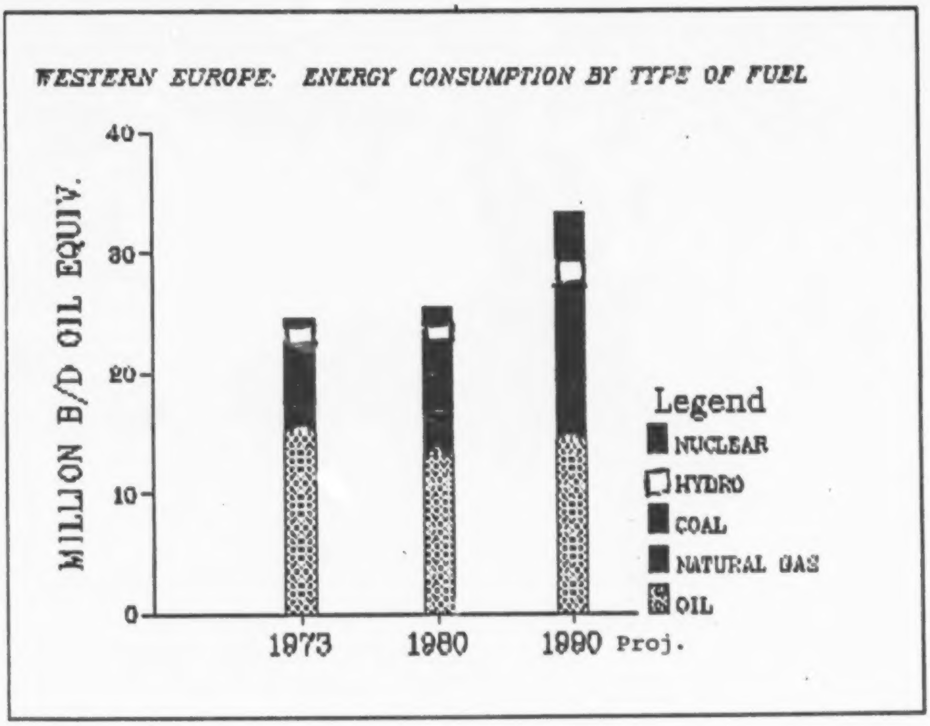

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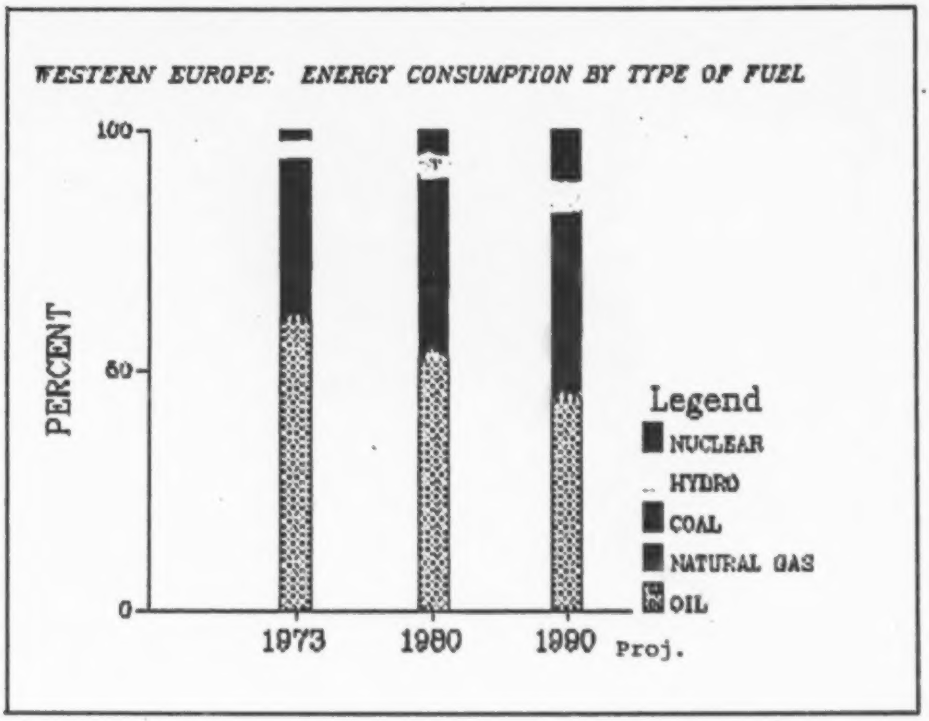
CHART 4



WESTERN EUROPE: ENERGY CONSUMPTION BY TYPE OF FUEL

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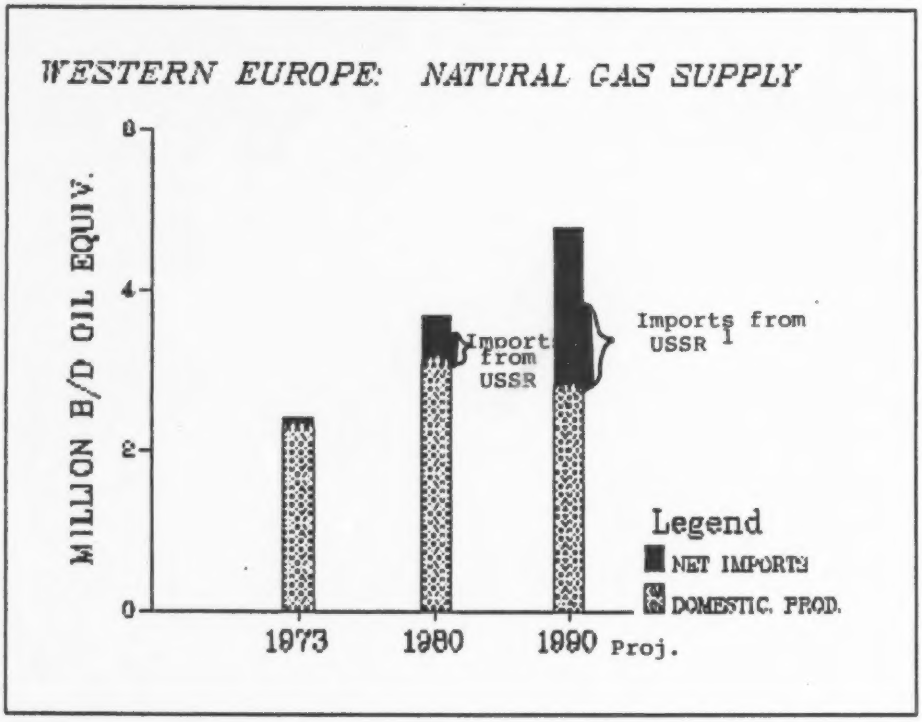
CHART 5



1. Includes supplies under proposed deal.

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RESPONSES OF MR. HORMATS TO WRITTEN QUESTIONS SUBMITTED BY SENATOR JACKSON

Question 1. Will the use of any U.S. technology be involved in the West Siberian Pipeline project? If so, what is it and why should the export of this technology be approved? What would be the effect on the commercial viability of the project if this technology or other western technology were unavailable?

Would the embargo of any U.S. or other western technology impede implementation of the West Siberian Pipeline project or impair its commercial viability? What consideration has the Administration given to this matter? For example, what are the positions of the Department of Energy and the Department of Defense? In light of the enormous potential advantages of the project to the Soviet Union and the potential disadvantages to the West, including increased Soviet leverage over the West, the acquisition of hard currency and western technology, and economic benefits which mitigate the dilemma confronting the Soviet Union in choosing between military and civilian investment, has the possibility of a U.S. or a coordinated Western embargo of technology for the West Siberian project been seriously studied?

Answer. The administration has under high level review issues related to licensing policy for the export to the U.S.S.R. of oil and gas equipment and technology.

No U.S. equipment or technology has been approved for export to the U.S.S.R. for which the stated end-use was related to the Western Siberian Pipeline project. It is possible, however, that some U.S. technology might be sought for use in the project. There has already been one British application in COCOM for a U.S. computer for use on the Czech portion of the pipeline. This was denied on security grounds not related to the pipeline. There are pending French computer sales for the pipeline, and comparable computers are also available from Germany, the United Kingdom, and Japan. Accordingly, there would not be a Soviet dependence on U.S. computers. The largest potential involvement of U.S. technology is related to gas turbine engines for compressors. There is, however, foreign availability in the United Kingdom.

The United States has a limited unilateral ability to hinder the pipeline by denying key components for its construction. Equipment to be used in the construction of the pipeline is currently produced, or can be produced, by foreign equipment suppliers not subject to U.S. technology controls. A U.S. embargo on equipment for the pipeline could serve to delay the pipeline's completion, but we understand that such a delay would not extend beyond the delays to be expected in any case. A unilateral U.S. embargo of equipment for the pipeline could spawn or speed up the creation of alternate suppliers of equipment in which the United States is currently the world leader. Nevertheless, this is a policy option open to us.

A multilateral equipment embargo towards the pipeline could be more effective in impeding the project. In this context, the cooperation of foreign equipment suppliers such as the United Kingdom, Japan, France, Germany, and Italy would be crucial. However, it is highly questionable whether these countries would participate in a multilateral embargo. France, Germany and Italy will buy the bulk of the pipeline's gas and have already received large contracts to supply equipment for the project. They have recently told us they intend to proceed with the pipeline. It is unlikely that they would be willing to embargo equipment sales for the pipeline. Foreign suppliers who are not pipeline participants, such as the United Kingdom, would be concerned about the risk of an open conflict with their European partners. Japan's participation in an embargo would likely depend on what Europe does.

Question 2. What are the estimated Soviet hard currency earnings from the West Siberian Pipeline project? What are the anticipated sources and amounts of financing for this project? What are the estimated Soviet hard currency earnings in the absence of the project?

Answer. When the pipeline is fully operational—which may not be until the late 1980s—it should be capable of exporting about 40 billion cubic meters of natural gas per year to Western Europe. Exactly how much hard currency the Soviets will earn will depend upon the base gas price and price esclator—neither of which has been settled yet, though there is some agreement in principle. There is, however, the potential for annual export earnings from this project of roughly $7 billion in 1981 dollars.

By way of comparison, Soviet hard currency earnings from merchandise exports totaled $23.8 billion in 1980, excluding sales of gold and military-related equipment, which fluctuate somewhat but usually add several billion dollars to total hard currency earnings in any given year. It is difficult to project the value of total Soviet hard currency earnings at the time this project comes on stream, though there is evidence that a slowdown may be occurring. Much depends on what happens to Soviet oil exports (currently accounting for about half of hard currency exports) and arms sales, and developments in the world gold market.

We expect that the necessary credits to finance the purchases of Western equipment and large-diameter pipe will materialize in the countries supplying the goods—primarily but not exclusively West Germany, France, and Italy. These will include some government and/or government-backed credits. A consortium of West German banks already has agreed in principle on long-term credits to cover West German equipment sales. Pipe financing is to be arranged at the time of the sale. Though it is not clear what the final price tag will be for the Western equipment and pipe, it could range from $10 to $15 billion. Press reports indicate that financing to cover these levels has already been arranged.

Question 3. What alternative energy resources including North Sea gas could fulfill the Western European energy needs which the West Siberian Pipeline project is intended to fulfill? Are these alternatives cost-effective and commercially viable? What are the potential economic benefits to the United States or other Western nations of developing these alternatives instead of the West Siberian Pipeline project?

Answer. We have discussed with Western European nations alternatives in a number of areas:

Gas.—African liquefied natural gas (LNG) is a possible alternative to Soviet gas. The long-term European market for African LNG will be determined by the price and security of the supplies, as well as demand from other regional gas markets. Gas price deregulation in the United States may contribute to European energy supplies. Deregulation will help stimulate domestic production, increase efficiency, and enable the United States to decrease its need for both oil and gas imports. To the extent that the United States will still require imported gas, market forces will favor imports from Canada and Mexico, and possibly other Western Hemisphere sources, rather than long-haul LNG.

Nigeria plans to build a major export facility for liquefied natural gas, half of whose output was earmarked for the United States. Changes in gas market conditions have already rendered it unlikely that the project will go forward as originally planned. The West Europeans, who planned to take half the gas, hold an option on the share assigned to the U.S. companies. Similarly, more LNG for European importation may become available in Algeria. It is possible that sufficient gas resources could become available in Algeria and Nigeria to replace most of the prospective Siberian pipeline deliveries. However, Algeria's price demands have to date been unacceptable to the Europeans and Nigeria's plans to develop its gas reserves for export have been delayed by administrative financial and price problems.

Gas resources may soon be developed for export in Cameroon and Qatar as well thus providing even more supplies for the world market.

Within Europe, additional gas is available in the North Sea, but additional development there requires long lead times and may not be economical at the present time.

Coal.—Coal is found in abundance in Western nations, and can be an economical alternative to Soviet gas in many applications.

The United States is committed to providing access to a reliable, economical supply of coal to its friends and allies. We are providing for an increased flow of coal from the United States to Europe: a 75 percent increase in coal export loading capacity is currently under construction; the Administration has proposed legislation to speed up port dredging which may be needed for the 1990s; regulatory barriers to coal infrastructure development are being examined, and many will be removed; we are working in the International Energy Agency to improve coal market transparency and have told our European customers that we are prepared to study with them additional measures to increase coal trade and use.

Nuclear.—The Administration has announced its commitment to the development of nuclear power in the United States and has stressed that the United States will reestablish itself as a reliable partner in the international nuclear energy arena. Our more positive position on reprocessing and expanded nuclear cooperation, particularly in the back end of the fuel cycle, could help to mitigate some of the problems associated with the accelerated development of West European nuclear power.

Oil.—Oil itself may be an important alternative to Soviet gas. Structural changes in oil consumption patterns could keep oil demand well below production capacity. The United States is making a strong contribution to this trend. U.S. oil imports this year are running at about 5.4 million barrels per day, 3½ million barrels below their 1977 peak. Unless there are some negative surprises, we forsee oil markets being in relative balance throughout this decade.

One argument for the proposed Siberian pipeline has been that it would generate employment for depressed European regions and industries. We have pointed out to the Europeans that the low interest rate of the export financing they are reported to be offering the Soviets on equipment for this project appears to imply a large subsidy and that a similar effect on overall employment would result if they spent the sums on other major industrial enterprises. This could includue construction of facilities necessary to use the alternative sources mentioned above.

Question 4. If the West Siberian Pipeline project is built, what percentage of Western Europe's gas supplies will come from the Soviet Union? Please provide estimates for Western Europe as a whole and by individual country.

Answer. The projections are provided in the following table.

WESTERN EUROPE—DEPENDENCE ON SOVIET GAS AS A PERCENTAGE OF TOTAL GAS CONSUMPTION AND OF TOTAL ENERGY CONSUMPTION

	1979		1990[1] (after completion of 4 bcf/d pipeline)	
	Gas	Energy	Gas	Energy
West Germany	14	2	29	6
France[2]	0	0	23–28	4
Italy	29	5	29	5
Netherlands	0	0	10	4
Belgium	0	0	32	8
Austria	59	12	82	18

[1] Based on individual government estimates of gas and total energy consumption.

[2] Contracted volumes of Soviet gas were delivered to Italy in exchange for Dutch gas until February 1980.

Note: Data from CIA.

On an overall basis, imports of Soviet coal, oil and gas made up 7.7 per cent of the above countries' total energy consumption in 1979. Soviet gas constituted about 3.2 per cent of total energy. In 1990, if the pipeline is operating, Soviet gas is expected to comprise about 6 per cent of Western Europe's energy consumption, but with the expected sharp reduction or elimination of Soviet oil exports to Western Europe, total Soviet energy supplies will still make up roughly 8 per cent of these countries' consumption.

Question 5. Is one purpose of the West Siberian Pipeline project to reduce European reliance on Middle East oil supplies? What assurance do we have that Soviet control over Western Europe's gas supplies will not be used as a "gas weapon" on the pattern of the Arab "oil weapon" thereby increasing rather than reducing Western energy security vulnerability?

Answer. Europeans argue that one purpose of the pipeline is to reduce European reliance on Mideast oil supplies. They observe that they are far too highly dependent on a few unstable nations for oil. (Middle Eastern oil constitutes 55 percent of European oil supplies, and oil in turn provides over half of European energy. The United States, by contrast, imports from the Middle East only one eighth of its oil, and oil is only 43 percent of U.S. energy supplies.) In the recent past, events in the Middle East have shown that energy supply crises can be provoked both by use of oil as a "weapon" and by political upheavals which have as a consequence reduction of available oil supplies.

There is, however, no assurance that Soviet gas will not also be used as a "weapon", or—perhaps more likely—as a lever with which to gain political benefits, just as certain Middle Eastern countries have done. We have made this point of view clear to the Europeans in our conversations with them. The Europeans argue that they have in place or will develop, a "safety net" of gas reserves or alternative energy sources to mitigate their vulnerability to a Soviet gas cutoff.

Question 6. In 1980, the Soviets threatened Western Europe and Japan with a cut-off of petroleum supplies in an effort to undermine support for U.S. sanctions against the Soviet Union following the invasion of Afghanistan. What assurance do we have that Soviet control over Western Europe's gas supplies will not be used as a political blackmail weapon to adversely influence the foreign and defense policies of our NATO allies?

Answer. Our concern is precisely that the Soviets would attempt to exploit Europe's dependence on Soviet gas to gain political or economic benefits. Veiled threats of supply cut-offs might be effective in provoking regions and sectors of European economies dependent on Soviet gas to urge their governments to avoid actions which they fear might lead to a supply cut-off. In 1980, for example, the Soviets never overtly threatened a petroleum cut-off to Western Europe and Japan, but they did mount a public affairs campaign emphasizing the fact that the U.S.S.R. was a significant supplier of energy to some Western countries.

Question 7. Soviet defense spending has been increasing in real terms for more than twenty years and, in recent years, sluggish Soviet economic growth has caused military expenditures to take an increasing share of Soviet GNP. Would termination of the West Siberian Pipeline project with the loss of hard currency earnings and Western imports cause increased Soviet economic problems and make it more difficult for them to maintain the current pace of their military spending?

Answer. The loss of hard currency earnings from the West Siberian Pipeline project should it be terminated would of course result in increased Soviet economic problems, and to that extent would increase the burden of Soviet military spending. But the Soviet economy is very large and more self-sufficient than most. Moreover, we are speculating on an income stream that will not begin to flow until 1986 at the earliest and not reach its peak until the end of the decade. Finally, despite mounting economic problems in the U.S.S.R., there is little to suggest that the military sector would lose its very high priority.

RESPONSES OF MR. HORMATS TO WRITTEN QUESTIONS SUBMITTED BY SENATOR BRADLEY

Question 1. Has the administration (a) evaluated and (b) discussed with the potential European importers of Soviet gas, the following measures to limit the security risks associated with their dependence on the U.S.S.R.:

(1) Imposing a fee on imports of Soviet gas to finance greater gas and oil stocks and to discourage imprudent conversions to gas?

(2) Making Alaskan gas available for export and assuring our European allies that the administration will facilitate legal and regulatory changes needed to permit privately-financed projects to ship Alaskan LNG directly to Europe? In this connection, please provide the administration's information, assumptions and assessments of the following:

> Will European utilities, industries and consumers be willing to pay more for imported gas than their American counterparts?
>
> Will the estimated costs of transporting Alaskan gas by pipeline to the American market match or exceed the estimated costs of shipping it by submarine LNG tankers to Europe?
>
> How does the administration weigh the international security effects of forcing American gas consumers to underwrite some of the financial risks of the pipeline project, as the administration has proposed, by approving pre-commencement billing for portions of the Alaskan pipeline? By preempting Alaskan gas for the American market, will this pipeline not drive our allies to seek still greater gas supplies from the U.S.S.R.?

Answer. (1) We have made clear to our European allies our concerns over the security risks associated with energy imports from the U.S.S.R., and the vulnerability that could arise from over-dependence on Soviet gas. We are discussing with our allies various measures that would reduce their vulnerability to a supply cutoff or political/economic pressure based on the threat of such a cutoff. Such measures cost money; a "security premium" to account for the external costs associated with the increased risk involved in Soviet energy imports would be one possible way to finance a "safety net" of the various precautions to reduce their vulnerability. But the exact method by which a safety net is financed is of course, a question for the Europeans themselves to decide, since it is they who are exposed to the increased risk and must pay the increased cost associated with it.

(2) The previous administration through its decision to support the Alaskan Natural Gas Transportation System (ANGTS) committed the United States to a method of transporting Alaskan gas. This decision received the full support of Congress, has been ratified in a treaty with Canada, and a portion of the pipeline has already been completed and is in use. The present administration has affirmed this support for a privately financed ANGTS and submitted a waiver package to the Congress to remove regulatory and legislative obstacles to facilitate its completion.

We believe that ANGTS is fully consistent with U.S. national security interests. Upon completion, it is expected to provide the United States with an energy source equivalent to 400 thousand barrels per day of imported oil. At the same time, it can reduce U.S. need for imported natural gas, which will free up existing supplies for Europe as a supplement or replacement for Soviet gas.

We have not evaluated shipping Alaskan natural gas to Europe nor presented specific propositions to the Europeans for using Alaskan gas as an alternative to Soviet supplies. All of the natural gas alternatives we presented to the Europeans involved either existing facilities or planned projects outside North America. In all of the alternatives we presented, natural gas producers and consumers agree that the facilities would be commercially viable. We are unable to judge whether European natural gas consumers are willing to pay higher prices than their U.S. counterparts. U.S. gas prices are lower than those in Europe, but the U.S. market has been regulated for some period of time. Ultimately, this question would have to be resolved in negotiations by the private sector. European companies would make this decision based upon the price and availability of alternate petroleum fuels.

While ANGTS is specifically designed to transport the 26 trillion cubic feet of proven reserves in the Prudhoe Bay area, and thus precludes that gas's use for other projects, new discoveries may make available additional gas supplies for other projects such as the LNG proposal to which you refer. Alaska has estimated potential reserves of over 100 trillion cubic feet and the existence of a proven method to transport Alaskan gas when ANGTS is completed should encourage further gas exploration.

Under the terms of the Alaska Natural Gas Transportation Act of 1976, exports of Alaskan natural gas are subject to the requirements of the Natural Gas Act and Section 103 of the Energy Policy and Conservation Act. In addition, before any Alaskan natural gas in excess of 1000 mcf per day may be exported to any nation other than Canada or Mexico, the President must make and publish an express finding that such exports will not diminish the total quantity or quality nor increase the total price of energy available to the United States. Clearly, the administration and regulatory agencies would have to have a specific proposal from the private sector before an evaluation of these criteria could be undertaken.

In addition, without having some agreed private sector proposal for an Alaskan LNG project in hand, it is difficult to foresee what other regulatory and legal barriers would have to be removed to enable a project to receive private financing. As such it is not appropriate for the Administration to make a commitment to remove any such barriers in advance. As for the comparison of costs between ANGTS and LNG, we believe that the relative merits of alternative means of carrying out commercial activities are best left to the private sector to evaluate.

Question 2. Has the administration demonstrated to the Europeans that we are willing to improve their options by:

Making it clear to them that we are no longer in the business of subsidizing the importation of natural gas. In particular, have we told them that we do not foresee the importation of additional quantities of natural gas from West or North Africa? Wouldn't such representations reassure the Europeans on the availability of this supply while at the same time reducing the economic and political bargaining leverage of these producers?

Answer. One of the key points in our discussions with the Europeans has been the changing outlook in the world gas and oil markets. We have made clear to them that at the present time, it is extremely difficult for long-haul LNG shipments to find a place in the U.S. market. Decontrol of natural gas prices will make LNG even less economical, and we have told the Europeans that we do foresee U.S. gas demand being met largely by North American sources after deregulation. They have accepted that these measures will increase the availability of gas on world markets, but have said they regard the additional supplies as supplements to Soviet gas supplies, and not substitutes.

Question 3. Encouraging Norway to act as an alternative source. Now that there is a new government in Norway, what steps are we taking to investigate possible alternative gas/oil development and payment arrangements which minimize negative effects on the Norwegian economy of expanding production? For example, are we encouraging the Norwegians to create excess capacity for surge production in any future production facilities they build? What is the surge capacity of current Norwegian facilities? How much could that be improved at relatively low cost if (a) built in? (b) if added on? Please answer the above questions in detail.

Answer. The new government in Norway has not changed that nation's policies with respect to oil and gas development. The policies of modulated development appear to enjoy wide popular support there. Norway is concerned about the economic and social impact of excessively rapid development of its hydrocarbon resources. We have expressed our willingness to explore with them and with European gas consumers possible financial arrangements which might ease the impact of more rapid development of North Sea resources on Norway's relatively small economy and labor force.

With respect to surge capacity, very large investments in gas production and delivery infrastructure would be necessary. The primary constraint on current Norwegian gas shipments to the major European consuming countries is the size of available pipeline capacity from Norway to Emden. Current capacity is as fully utilized as possible, and the economics of offshore petroleum production and pipeline construction and operation argue for ensuring that any additional infrastructure is also utilized at nearly full capacity, leaving little room for surge transmission of gas. We are nonetheless exploring the possibility for accelerated North Sea resource development with the Europeans. Dutch resources, both on land and in close proximity to the coast, appear to offer a better outlook for possible surge capacity than do Norwegian ones, because the Dutch fields are already linked to transmission systems by an extensive infrastructure network.

Question 4. Are European estimates for their total and sectoral expansion of gas demand being critically reviewed in light of (1) the increasingly successful, market-driven adaptation of less energy intensive technologies by the industrialized nations since 1973; and (2) the unprecedented stagnation and downturn in European natural gas consumption since 1979? Please provide the Committee with the substance and conclusions of any such review.

Answer. The United States' assessment of the risks and benefits associated with the proposed Siberian pipeline is based on a critical assessment of prospective European gas demand. In recent consultations with European governments, we underlined recent declines in overall energy consumption, improvements in European industries' energy efficiency, and the unprecedented decline in gas consumption in 1980.

Our allies responded that unofficial European projections of gas demand already assume reduced consumption trends. Furthermore, they noted that the pipeline is a commercial project and that the utilities contracting for Soviet supplies will be responsible for sale of this gas, and should have taken demand projections into account. Finally, European leaders indicated that by increasing their consumption of Soviet supplies, they can shut in more domestic resources, thereby creating an effective safety net and an assurance of a supply of relatively inexpensive and secure gas.

Question 5. According to an article in the National Journal, Mr. Reagan personally asked Japanese Prime Minister Suzuki at the Ottawa Summit to restrain Komatsu from selling pipelayers to the Soviets until after the allies had a chance to consider the Soviet pipeline issue. Mr. Suzuki apparently informed Komatsu officials that any deal with the Soviets was "on hold" until further notice because of the Reagan request. Yet within 10 days of the Summit, and without consulting the Japanese, the President approved Caterpillar's export license. Administration officials repeatedly testified to Congress that unless Caterpillar was granted an export license, the Soviet Union would close a deal with Komatsu. The National Journal story casts serious doubt on these claims and hence raises disturbing questions about the seriousness and direction of U.S. East-West trade policy. Please provide the Committee with a detailed, and if necessary classified, account of all discussions with the Japanese before, during and after the Summit that relate (a) to the Caterpillar export license; (b) to any potential Komatsu sale of comparable equipment to the U.S.S.R.; and (c) an explanation of how those discussions influenced the decision to grant the Caterpillar license.

Why were the Japanese not consulted before our decision to grant the Caterpillar license? What explanation, if any, have they subsequently been offered?

Answer. In the course of several discussions with Government of Japan officials before the Caterpillar export license was approved, the issue of restraint on pipelayer sales was raised. The conversations resulted in no commitments. Komatsu had previously sold pipelayers to the U.S.S.R. without any involvement by the Government of Japan. No Japanese export license is required for this non-COCOM item. Japanese cooperation in controlling exports of non-COCOM items has been through case-by-case review of applications for government-supported credits. But Komatsu had not obtained such credits for previous pipelayer sales. Subsequent to the Caterpillar license, Komatsu made another sale, this time with government-supported credits.

Question 6. Didn't the administration also fail to consult, as it had promised, with its partners in the grain embargo before terminating it unilaterally?

Answer. The administration informed the other grain exporters and key allies of the decision to lift the grain embargo in the days before the announcement was made on April 24. There was sufficient time for us to receive comments from these governments and answer many of their questions before the news became public. While some countries may have preferred a longer lead time, we had to take into account the need to avoid a news leak and disruption of the grain market. In our view, by giving our allies advance notice of the decision and responding to their comments we consulted with them as fully as could realistically be expected under the circumstances.

Question 7. How can the administration expect more effective cooperation from our allies in restraining exports of sensitive goods and technology to the U.S.S.R. if it appears to be using their willingness to exercise restraint to help secure Soviet markets for American grain, pipelayer or other producers?

Answer. The United States is seeking greater allied cooperation in restraining exports of sensitive goods and technology to the U.S.S.R. primarily through COCOM. At the request of President Reagan, other summit leaders agreed at Ottawa to hold a High Level Meeting to discuss improvement in the present system of controls, and we expect this meeting to take place in January. COCOM controls cover export of equipment and technology which could make a significant contribution to Soviet military capability. Grain and pipelayers are not controlled by COCOM. The sensitive goods and technology which we believe should be covered by strengthened COCOM controls are more directly related to military use or military support than are those items.

Senator PERCY. I would like to thank each of you for representing the administration today. Your testimony has helped to clarify an important part of our international energy policy and our broader foreign policy. I hope we can find a resolution to this issue that will best satisfy the interlocking demands of our security, energy, and trade policy. Most importantly, it is essential that we find a solution. Let us work toward the common interest that we share with our allies rather than exacerbate our potential differences.

The hearing is adjourned.

I thank you.

[Whereupon, at 11:05 a.m., the subcommittee adjourned subject to the call of the Chair.]

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

Statement of

DR. ELIHU BERGMAN, EXECUTIVE DIRECTOR
AMERICANS FOR ENERGY INDEPENDENCE

Submitted to the

SUBCOMMITTEE ON ENERGY, NUCLEAR PROLIFERATION
AND GOVERNMENT PROCESSES
COMMITTEE ON GOVERNMENTAL AFFAIRS
United States Senate

October 30, 1981

Mr. Chairman:

Americans For Energy Independence is pleased to respond to your request of October 9 for our views on Soviet energy exports and Western European energy security, which your subcommittee is examining.

Americans For Energy Independence is a public interest organization representing a broad cross-section of American society committed to energy policies that will reduce U.S. dependence on insecure sources of foreign oil. We are similarly concerned with the energy security of America's allies because of the interdependence of our security and energy relationships.

Until Western nations have substantial flexibility in their choices of energy resources, none of them will be secure. This is particularly true when our European allies, like the United States, must rely on energy resources derived from unreliable sources. To shift from one unreliable source, the Middle East, to another, the USSR, is hardly progress in removing this Achilles heel of the Western alliance.

We would obviously prefer that the Western European nations acquire their energy requirements from a combination of indigenous sources and reliable suppliers such as the United States and Canada. We believe that it should be a U.S. policy objective to increase North America's energy production to a level that would relieve our allies from the need to seek supplies from unreliable producers. If the Western European nations continue the perilous course of increasing reliance on Russian natural gas, we may well share in suffering the consequences unless alternatives are developed.

Western European dependence on natural gas is all the more disturbing because of the dramatic increase of natural gas usage in Western European countries. Since 1973, natural gas consumption by Western Europe's biggest energy consumers--West Germany, France and Italy--has increased by 60 percent and now makes up about 20 percent of their total energy usage. Any interruption of these supplies would create a devastating impact on the economies of these countries. And unlike oil, which is being stockpiled as a buffer against unforeseen cutoffs of imports, there are no comparable facilities for reserves of natural gas. Under the circumstances, even a short supply interruption would be felt immediately. The potential for political blackmail of Western Europe associated with this leverage is not likely lost on the Soviets.

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Natural gas will continue to play an increasing role in the energy mix of Western Europe. In the face of this inevitability, the U.S. responsibility is to assure alternative fuel supplies so that a European dependence on natural gas imports is not added to a dependence on Middle East oil imports. As the major energy fuel producer in the Western alliance, the U.S. role is pivotal in reducing the energy vulnerability of the Western alliance. Until our allies are convinced of our credibility in assuming this role, no amount of "jaw-boning" will influence them to resist the temptation of abundant Soviet natural gas. Furthermore, prudency dictates that our policy be based on a "worst case" scenario. While attempting to dissuade our allies from pursuing a dangerous course, we should prepare to minimize the potential disastrous effects of European reliance on Soviet gas.

To achieve this credibility, the United States must:

One: Intensify efforts to reduce our oil consumption by greater efficiencies in using oil, and by greater substitution of coal, nuclear energy and domestic natural gas wherever possible.

Two: Assure the Western European nations that reliable supplies of natural gas will be available for their short and long term needs from sources outside the Soviet Union.

As a credible alternative to Soviet natural gas, the U.S. Government should provide the necessary encouragement and incentives to U.S. and Canadian producers to establish natural gas reserves, extraction capabilities, and LNG conversion facilities. We believe that the Russians would view their opportunities for "unhealthy influence" as greatly diminished if they knew that the West Germans could obtain LNG rapidly from us or the Canadians. The key to deterring crises is the establishment of alternative supplies,readily and easily available.

Both the United States and Canada have gas reserves which exceed our present requirements and which can be further developed. These reserves, if prepared for utilization, could serve both our needs and those of Western Europe for a short term emergency. Their exploitation as an alternate source of supply reduces the temptation for Soviet manipulation.

In summary, we should satisfy ourselves that natural gas supplies outside the Soviet Union are maximized and that a credible alternative to a Soviet supply is created. Clearly, opportunities exist now to achieve this objective. Our principal goal, from both the economic and national security vantage points, should be to use North America's abundance to avoid a situation in which OECD dependence on interruptable Soviet natural gas is added to a dependence on insecure Middle East oil.

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